Yachting

SEP 22 1919

SEPTEMBER, 1919

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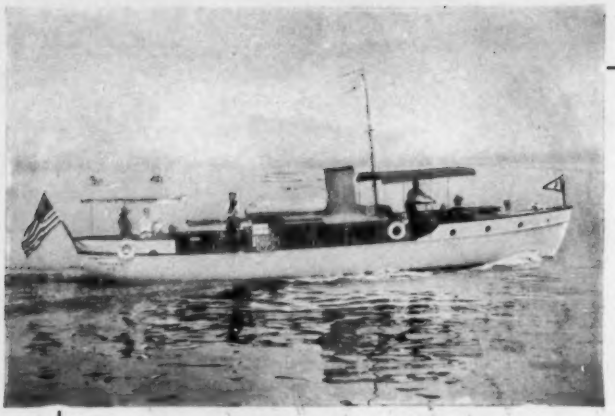

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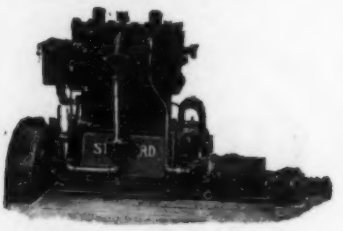

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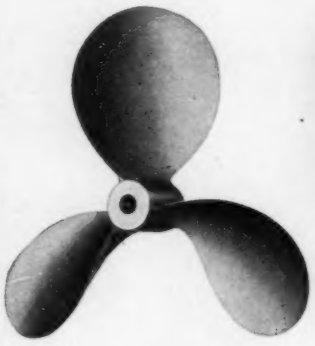

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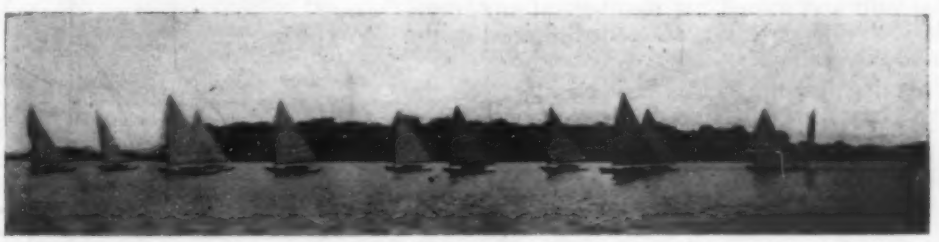
FOR SEPTEMBER, 1919

WILLIAM ATKIN, Editor

VOL. XXVI NUMBER III



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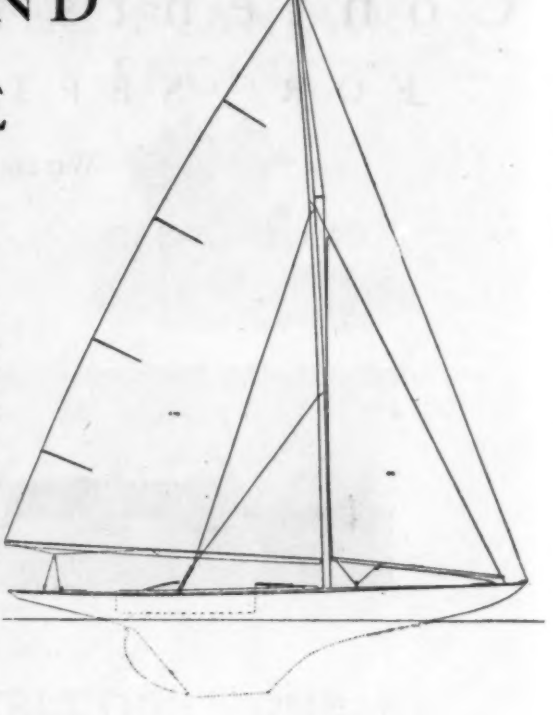
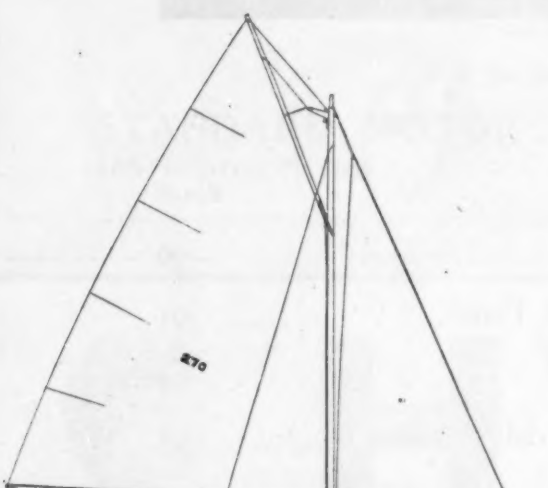
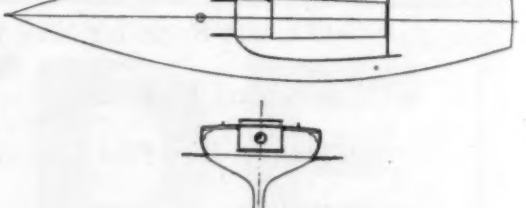
A LONG ISLAND SOUND ONE DESIGN CLASS

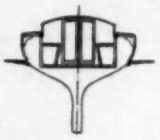


THE season of 1920 will see a new class of 18 foot water line boats in use on Long Island Sound. This craft can be built and owned by members of any recognized yacht club and should create added interest in the sport of small boat sailing.

An interesting feature of this new class will be the fact that the boats may be rigged in two ways, with a gaff-headed sail or with a Marconi rig; of course both of equal area.







As shown in the sketches herewith two different deck arrangements are provided, one, a self bailing cock-pit with the hatch in the deck; the other, an open cock-pit with a small cabin trunk similar to the Seawanhaka *Fish* boats.

The similarity of the plans of this new one design class and of the Larchmont Yacht Club 38-footers is marked.

It may not be amiss to mention here that the dimensions of these boats are as follows: length over all, 29 ft. 0 in., length over all, 18 ft. 3 in., width 7 ft. 0 in., draft 4 ft. 3 in., sail area 361 sq. ft., and that the plans for them were drawn by William Gardiner & Co.

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YACHTING

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Gulf Coast Races for Nine Days

Southern Yacht Club Holds 190-Mile Race for Garic Cup and Three Yachting Organizations Hold Regattas from July 4 to 13

By H. H. DUNN

YACHTSMEN of Louisiana, Florida and Mississippi took nine days out of the month of July to devote to their favorite sport, during which time the longest motor boat race of the season in the United States was run, the Pensacola Yacht club held a regatta, the Biloxi Yacht Club held its annual event, with two days of racing, one for sail- and one for motor-boats, and the Pass Christian Golf and Yacht Club devoted a day to water sports at Bayou Portage.

The regatta started at 4 P. M., July 4, when the first division of motor cruisers entered in the southern classic—the Garic cup race, from West End, New Orleans, to Pensacola—left the starting line in front of the Southern Yacht Club house on their 190 mile run. Several hours later the second division started, and shortly before daybreak of July 5, the third and last division, consisting of the fastest boats, got away.

The first boat to finish, as she was the first to start, was *Violet*, the flagship of the S. Y. C. fleet, owned and driven by Commodore Percy S. Benedict. She made the run in 18:25:40, arriving in front of the Pensacola Yacht Club at 10:25 A. M., July 5. *Violet* was awarded two cups—the Southern Yacht Club trophy for the first motor boat to finish, outside the Garic cup winner, and the San Carlos Hotel trophy for the winner of the 12-miles-an-hour class. Commodore Benedict handled *Violet* all the way, and she behaved splendidly, never missing a shot all the way from West End to Pensacola, even in the midst of a 20 knot offshore wind, which persisted all the way from Fort Morgan to Pensacola Harbor, a distance of 50 miles, all on the open Gulf.

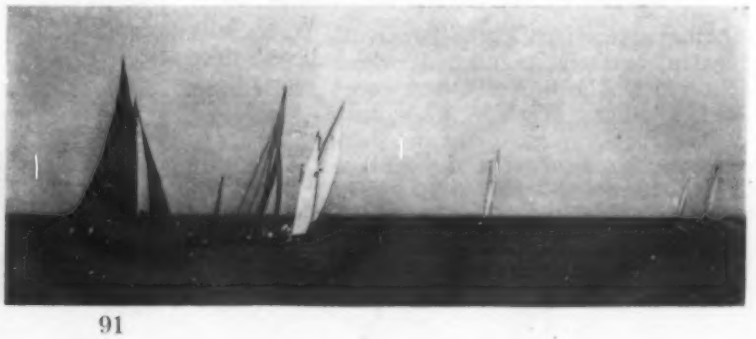
Mercathides, owned and driven by P. P. Stewart, of the Pensacola Yacht Club, which, with A. V. Rogers' *Firefly*, came to New Orleans from the Florida port just to get into this race, left New Orleans with *Violet*, and finished second, at 11:02 A. M., July 5, thereby winning the S. Y. C. second cup for the second boat to finish, aside from the Garic cup winner.

J. Eugene Pearce's *Miramar*, a handsome cruiser which the New Orleans moving picture magnate recently bought from Fred Semple, of Louisville, also left New Orleans with the first division, but had so much engine trouble that she did not reach Pensacola until 1:22 P. M., July 5, having required 21 hours, 22 minutes, to cover the 190 miles. She received the Pensacola Yacht Club's consolation cup as the last boat to finish. J. E. McMahon's *Lurline II* and W. B. Gillican's *Au Revoir*, failed to finish before 5 P. M., July 5, and so were out of the official finishes.

The express cruiser race, however, was run by *Brenda II*, owned and driven by C. B. Fox, vice-commodore of the Southern Yacht Club. In addition to winning the race with an average speed of a trifle more than 20 miles an hour, *Brenda II* broke the previous record of 10 hours, 13 minutes, made by Ernest Lee Jahncke's *Quicksilver* in 1916, by covering the distance in nine hours 29 minutes and 50 seconds, from which, as a matter of fact, ten minutes should be deducted because of delay due to the stupidity or laziness, or both, of a bridgetender at the Northeastern draw on Lake Pontchartrain, a few miles from the starting point at New Orleans.

By this race, in which she was driven virtually all the way by Vice-Commodore Fox, *Brenda II* retired the Garic cup in favor of her owner, having won a leg on it in 1917 and another in 1918, the deed of gift providing that the cup must be won three times by the same boat to become the permanent property of any contestant. She was also awarded the Southern Yacht Club's cup for the fastest time ever made in this race. *Brenda II* is powered with two 200-horsepower Van Blerks, and, according to R. C. Valle, her engineer, this pair never missed a stroke in the whole 190 miles, performing perfectly even in the difficult waters of Pass aux Herons, Swash Channel, and the open gulf when the heavy wind came out off the land to interfere with the racers.

This was by far the best of all the eight annual races which have been held since the Garic cup was offered. The first and second of these races were won by Albert Mackie's *Elizabeth*, which, it was expected, would be a contender this year. The third and fourth went to Ernest Lee Jahncke's *Glendoveer*, and the same owner's *Quicksilver* captured the fifth. Then came the war, and owing to harbor restrictions on the port of Pensacola, the course was changed to Biloxi, Miss., a distance of only 87 miles from New Orleans, where it remained for 1917 and 1918. *Brenda II* entered the field in 1917 and won easily both years. This year, by vote of six to two, the regatta committee decided to return the race to Pensacola, and *Brenda II* again demonstrated her right to the place as queen



START of the cabin sloop race to Biloxi from New Orleans.

BRENDA II (Vice-Commodore C. B. Fox, S. Y. C.), winner of the Garic cup race from New Orleans to Pensacola, 190 miles.

of the S. Y. C. fleet by smashing all the southern records for the distance. There were ten entries this year, but only six boats started. *Haoma*, one of the fastest boats in the fleet, owned and driven by H. N. Moody, who is in every race and every other advancement of yacht club life, was withdrawn at the last moment owing to illness in Mr. Moody's family. *Tennessee*, the big, good-looking cruiser lately acquired by Fleet Captain I. T. Rhea, sank at her moorings in the New Basin Canal a day or two before the race, when a careless employee left her seacocks open, and could not be overhauled in time for the contest. *Firefly*, which came over from Pensacola to take part in the race, did not get into it, and *Quicksilver*, recently purchased from the government by "Mannie" Sporl and George Plant, could not be got ready in time. The field was thus reduced to six starters. The S. Y. C. patrol boat preceded the racers and checked them at the Rigolets, afterwards following on to Pensacola.

After taking part in the Pensacola regatta, and the grand ball which followed it, the S. Y. C. fleet raced back to Biloxi, Miss., in a handicap contest for the Werner cup and there took part in the regatta of the Biloxi Yacht Club held July 9–10. The special feature of the first day of this regatta, which was devoted to sailing craft, was the race for sailing schooners, which drew a large number of entries from the Mississippi coast fishing fleet. The second day, which was devoted to motor boats, developed an equally interesting race with many entries in the event for auxiliary schooners, of which there are scores along the gulf coast. Thereafter the fleet cruised to Bayou Portage, where the Pass Christian Golf and Yacht Club held a regatta July 12, and thence returned to New Orleans, arriving July 13 and 14, after nine days of the best water sports the gulf coast has ever seen.

The Southern Yacht Club is making every effort this year to revive interest in sailing races, and has succeeded largely through the construction of a fleet of six 21-foot open sloops, of one design, which are racing off the S. Y. C. house at West End almost every Saturday. The old-timers, former commodores, vice-commodores, rear-commodores and other officials of the club in days gone by have taken much interest in this revival, and have sailed virtually all the races in the 21-footers. On the afternoon of July 5, all six of the "fish class boats" were out and W. B. Edgard, sailing *Minnow*, though he got away next to last at the one-gun start, won the race, beating such old-time sailors as "Billy" Porteous, who handled *Tarpon;* Stirling Parkerson, in *Shark;* Al Farrell, in *Porpoise;* J. M. Kinabrew, sailing *Mackerel*, and F. F. Farrell in *Pompano*. The course is three times around a two mile, triangular course, and the races are drawing crowds to the S. Y. C. house every Saturday.

Surprising records also were hung up in a race of cabin sloops from New Orleans to Biloxi, which started at 5 P. M., July 5, and finished between 3 and 5 A. M., July 6, the first race of its kind which has been held in these waters in some years, and pleasantly remindful of the old days when every summer found dozens of sailboat races off every port on the gulf coast. E. H. Keep, one of the veteran yachtsmen of the coast, won the race, sailing *Sis*, owned by Lawrence Fabacher. He covered the 87 miles in the remarkable time of 10 hours and 40 minutes, winning the S. Y. C. cup. *Sinner*, owned by Robert Spearing and sailed by W. L. Mangan, finished only ten minutes behind *Sis*, and the other four of the six entries all reached the finishing line before daybreak. All took part in the Biloxi Yacht Club regatta.

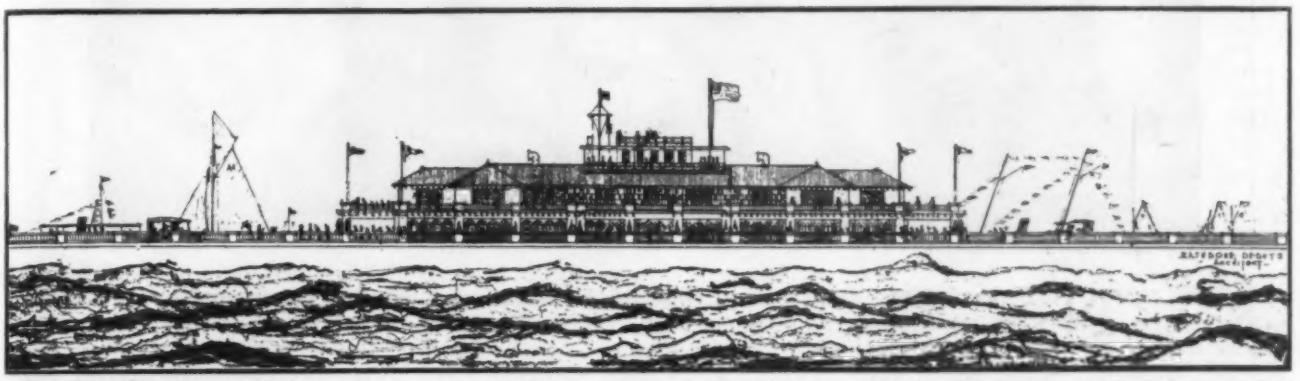
Bon Voyage!

I WISH you a boat and a sailing breeze,
And the lift of an easy swell;
A quick reach out, ere you go about
Round the shoal that you know so well;
A quiet run home through the evening haze,
On the heels of the making tide,
And a breath to last, till you're made all fast,
And the dinghy's moored by the side.

I wish you a sun on seas which run,
Agleam in their valleys wide;
The shivering shake as the green you take
In a welter overside;
And the sting of the spray, as you thrash your way
And luff to the screaming squall;
And the flurry of foam, as you hurry for home,
And . . . gear that will stand it all!

AU REVOIR, W. B. Gillican's new cruiser, one of the contenders in the Garic cup race, July 4-5.

The Southern Yacht Club is building this year a new clubhouse, to cost $250,000. It will be a concrete and steel structure, from designs prepared by Rathbone DeBuys, club architect. It will stand a little further out in Lake Pontchartrain than the present clubhouse, and will have behind it large pens for motor and sail boats. The club has had an unprecedented growth in membership under the administration of Commodore Benedict, who is now serving his second term, and has reached the 2,500 mark in members, being the largest yachting organization in the New World. It is the second oldest yacht club in this country, having been founded at Pass Christian, August 6, 1849, and is exceeded in age only by the New York Yacht Club, which it has passed in membership. A movement is now on foot to unite all the yacht and boating organizations of the gulf coast in one association, so that interstate and intercity regattas, cruises and races can be arranged between these clubs each year.



ARCHITECT'S drawing of the new $250,000 home of the Southern Yacht Club, on which construction will start in September. This view is from the lake, and the 1,000 foot boatpen is in the rear of the clubhouse.

From the Editor's Mail

The Editor of YACHTING,
New York.

Dear Sir:—

Delighted with the photos and articles of model yachting in the late numbers of your good monthly.

As you have shown the type of craft used on both seaboards, it would be interesting to know what kind of craft are being developed in England, where I believe there is more interest in models and racing than here. Racing here for the last few years is on its last legs, because all of our models are built to old sail area water line rule which seems to bring very freak boats with deep finkeels, perhaps of half the draft of w. l. and very large sails. This type of boat is just as much out of date with yachting folks as skimming dishes or sandbaggers. Sons of present day yachtsmen demand models like the present N. Y. Y. C. rule boats or universal rule that, to scale, would make fine little boats.

One reason the modelists here do not want to change the old rule is that it is so easy to design to. Any one can fathom it.

The Brooklyn Daily Eagle gave a perpetual challenge cup to be raced for yearly; Decoration Day and Labor Day, and it has been the cause of over 100 models being built and raced over 20 years, I think, and is the one and only "America's Cup" for American model yachting.

Some years ago Mr. Easton of Greenwich, Conn., and New York, offered a challenge cup for models, and picked out *The Rudder* to be the custodian of the trophy, and selected the old international rule of England, hoping to have yachts of seaworthy type able to race our English cousins. He brought over an English champion which was easily beaten by American built boats at Prospect Park Lake. It was claimed that some of the rules were not carried out as they should have been, and the series declared off; and the half dozen models built under this rule, also about dead in England, have not raced since.

WHY a big boat when a little, inexpensive, and easy-to-build craft, may be purchased in which youngsters may learn to sail? Herewith is a sketch of a little craft—15 ft. x 6 ft. and all boat.

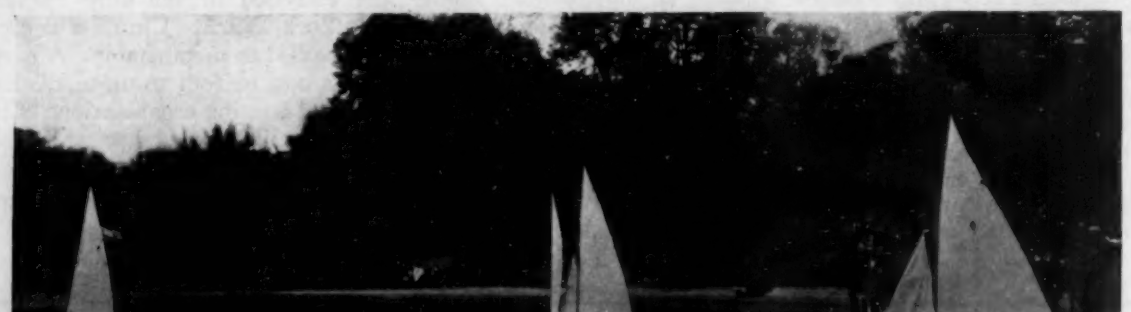
Lately the U. S. Navy has, I believe, decided that models can be used to very great advantage in deciding on designs for large vessels of all classes for surface, above surface, and below. For every important craft one or more models must be made.

In England, the best designers have published designs of 18 footers to the new B. R. A. rule, and the modelists have made scale models 2 inch to foot to try out the possibilities of the rule. From accounts they proved to be sound little boats, interesting, instructive, and useful. It would be as interesting if new ideas for, say our universal, or N. Y. Y. C. rule could be tried out with models. The old w. l. and sail area rule would not do in scale for models from large racers, because the models would not carry the sail though on the displacement models like the "P's" or "R's" it might.

As YACHTING in the past has devoted a few pages to the interest of models, and as you have been so generous lately, why not advise building to a modern rule boats that would be more interesting, up to date, and useful, and perhaps to start off model building and racing to hold the enthusiasm of some years ago.

In the last few years the Navy has spread all over the country the charms of sea life; and many men in the future, if the country continues to prosper, will take up yachting for pleasure; and as all the roads, even if dustless, are so crowded that one for a few hours' quiet will be driven to the shores, there to embark or take wings. This will mean a revival of yachting in all sizes perhaps, of which models should be considered first, so that I hope the few pages of late in YACHTING may be a monthly fixture.

Very truly yours,
FRANCIS LEE HERRESHOFF.



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NOT the famous Round Pond, but its American counterpart, Conservatory Lake, in Central Park, New York.

The Round Pond—A Meditation

The following "theft" from a recent issue of THE LONDON TIMES *is worthy of reproduction*

ON a spring morning the Round Pond and its surroundings would strike any one as beautiful; to one who has haunted that delicious pool for the whole of his conscious life it is a perfect gem in its emerald frame. But the lifelong joy of the Round Pond is not in its setting. What feasts the eyes of every lad of every year is the water and the boats. To have been a skipper on the Round Pond is to have entered a life-long brotherhood.

There is no child but wishes to own something that will float, and, if possible, move, unaided on the most mysterious and delightful of all the elements. Full initiation comes slowly, by well-marked degrees. First, the simple unrigged boat that floated enchantingly on the waters of the bath; then perhaps the paper boat sent out on a perilous voyage, from which it never returns; next, inevitably, some foolish grown-up, usually a grandmother who has no sealore, buys out of the goodness of her heart some gimcrack thing with a ridiculously shallow draught and a crowd of sails that will not move—a craft that anybody could see was not seaworthy and doomed to capsize at the first breath of the wind. Few disappointments in after life are so poignant as the fatal foundering of this toy, so breathlessly carried to the Pond, so tearfully borne away.

But soon the real apprenticeship begins. First the craft is tiny, a mere cockleshell, with an ill cut, flimsy mainsail, held by a tenous thread of a sheet: still, she floats, and her sail bellies in the breeze. Her coasting voyages are timorous and slow; her nose hardly wrinkles the surface of the water, and she labours sadly in one of the tricky squalls which make the Pond a terror to all young salts. The successor marks the process from able seaman to skipper. She is larger, more seaworthy, and fully cutter-rigged, and her owner, now trusted with his own guidance as well as with that of his ship, spends with her unforgettable days that are all too short for the romance they hold. He becomes an expert in the trade routes of the Pond, gauging to a nicety the right port from which to launch for the longest possible voyage, provided one of those annoying flukes does not blow up to drive the vessel ignominiously into the very haven from which she started. Finally, with luck, the last and finest of the fleet is acquired, the ship of worth and substance, cunningly fitted with a swing rudder, with trim lines and a racer's bows, a well-caulked deck, and a main sheet neatly adjustable with tiny guys. It is the ship of one's boyish dreams and one's more elderly memories. How proudly she sailed, how gracefully she heeled over in the wind! With a fair wind on the beam she moved like a fairy, curving the water with her bows and leaving a prodigious wake. It was impossible to say from what aspect she looked finest; whether it was from her stern as she serenely made off on a new tack, or whether it was from end on, as she made for shore, her jib and foresail showing like two threads so prettily curved, but trim and taut, holding her head well up into the wind.

There were bad days as well as good for the master mariner. Collisions, if rare, were always possible; and collision might mean that neither was recoverable without the pole of the kindly keeper. Then there were grievous accidents to be avoided on shore, such as the dropping of the gallant ship and the inevitable destruction of the bowsprit. It was a bitter day when this happened, for it meant a whole day's sailing wasted while the vessel went to dock. Dead calms were to be feared also, especially towards evening, the gathering dusk, the last minute

(Continued on page 124)

Twenty-Five Foot Cruiser—*Spray* Model

C. ANDRADE, JR.

THE *Rudder* for June, 1909, published my analysis of the various mathematical elements of the yawl *Spray*. The article included the metacentrix heights, displacement curve, curve of stability, curve of immersed girths, and a calculation of all the various centers of force and resistance in the original *Spray*.

For many years I have intended building a boat on the lines of the *Spray*, but somewhat smaller. Mr. Victor Slocum remarked to me recently that his father had considered the *Spray* a little too large to be handy, and when I showed Mr. Victor Slocum the lines that appear with the present article, he approved them as just about right for cruising. He manifested great interest in the design, particularly the addition of the engine, and expressed the hope that a number of boats would be built from these lines, as he felt that the type should be perpetuated.

SHEET I, LINES

The lines which appear in the present article were developed by me from the body plan of the *Spray*, as it appears in Slocum's book. This body plan in the book appears on a much larger scale than the sheer and half breadth plans. I therefore chose the body plan, as offering the smaller chance of error in expanding from the size of the lines in the book to the size of the lines actually used. In the present instance the lines are expanded to a scale of 1½ in. to the foot, producing a boat two-thirds the size of the old *Spray*, and eight twenty-sevenths the displacement, or about 10,500 pounds.

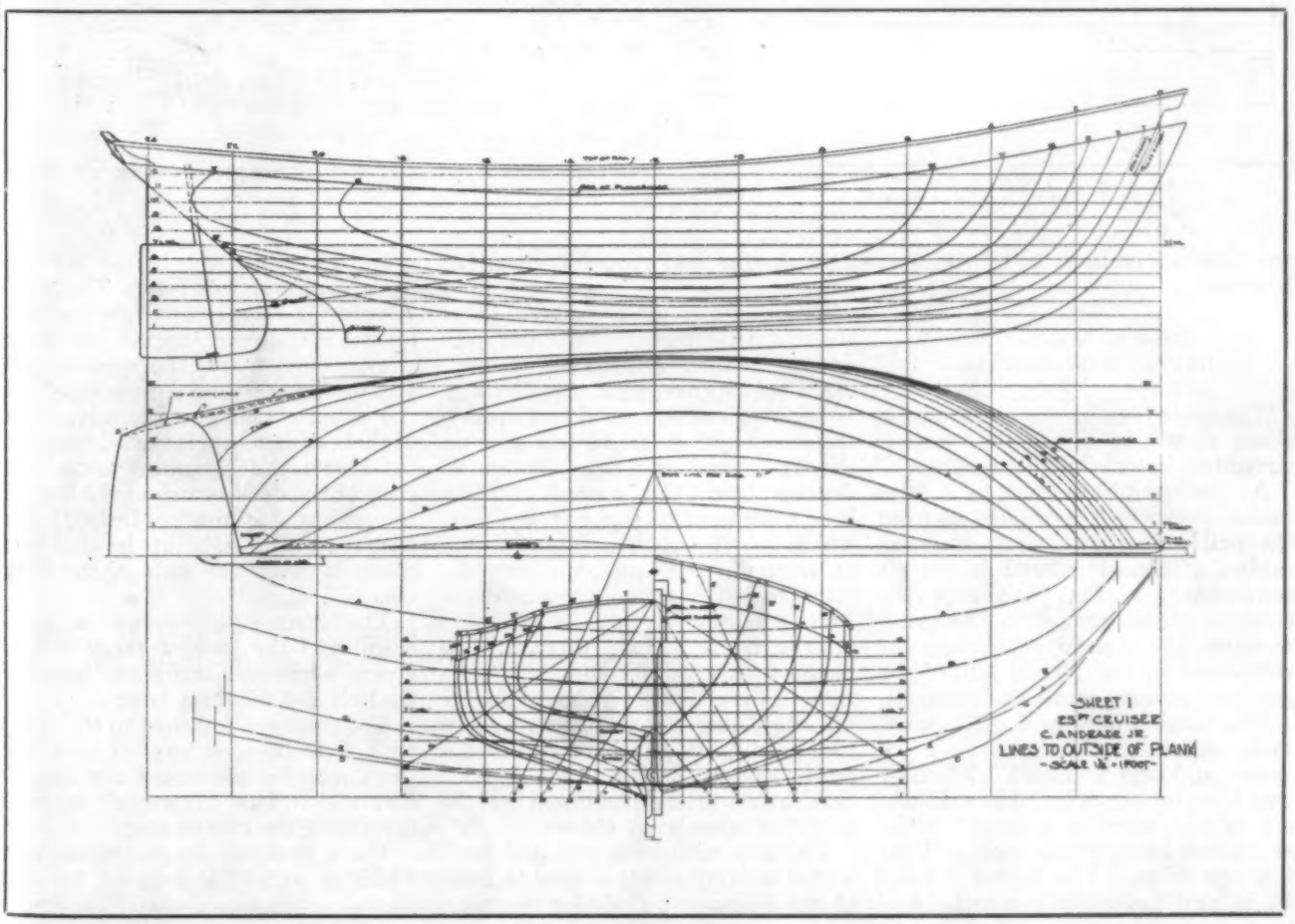
In developing the lines I have used 12 water lines, 6 buttocks and 5 diagonals. I spared no pains in getting them accurate, and believe them to be as fair as it is possible to bring a set of lines. The buttocks and upper water lines from the midship section aft are laid out with the flat of a sheer batten, and the diagonals almost up to the bow are laid out in a similar manner.

The buttocks and diagonals, particularly diagonal D, which is a normal almost the entire length of the boat, exhibit wonderful ease and refinement, and explain the fact that the *Spray* at her best logged 8 knots under sail.

In the article of June, 1909 referred to, I made a very complete analysis of the qualities exhibited by the *Spray* lines, and will not here repeat what I there said.

I have adhered scrupulously to the lines as given in Slocum's book, with such fairing as was necessary.

There have been only two modifications: First, the necessary change of cutting away the skeg and setting the rudder a little farther aft, so as to leave room for the propeller; Second, a modification in the sheer line of the top of the rail and the rake of the rail at the stern. These changes in the rail give the boat a totally different appearance from the original *Spray*. Her rail was brought up square at the stern, and carried a constant height of 14 in. the full length of the boat. The sheer line of the rail in the present design and the rake at the stern materially increase her good looks without in the



slightest degree detracting from her working qualities.

SHEET 2, TABLE OF OFFSETS

This table has been worked up with much care, and where necessary, gives the plus or minus mark after the eighth of the inch, thereby bringing the measurement to within one-sixteenth of an inch for mould loft purposes. There is one feature in the table of offsets which is somewhat unusual, and that is, the table furthest to the right. Here are a set of dimensions applicable to the sheer plan and half breadth plan, showing the distance from the intersections of the water lines with the stem, rabbet and buttocks, to the nearest station forward of such intersection. By using these dimensions in both the sheer plan and the half-breadth plan, there is a check on the accuracy of the buttocks and water lines and the lines can be brought to complete fairness.

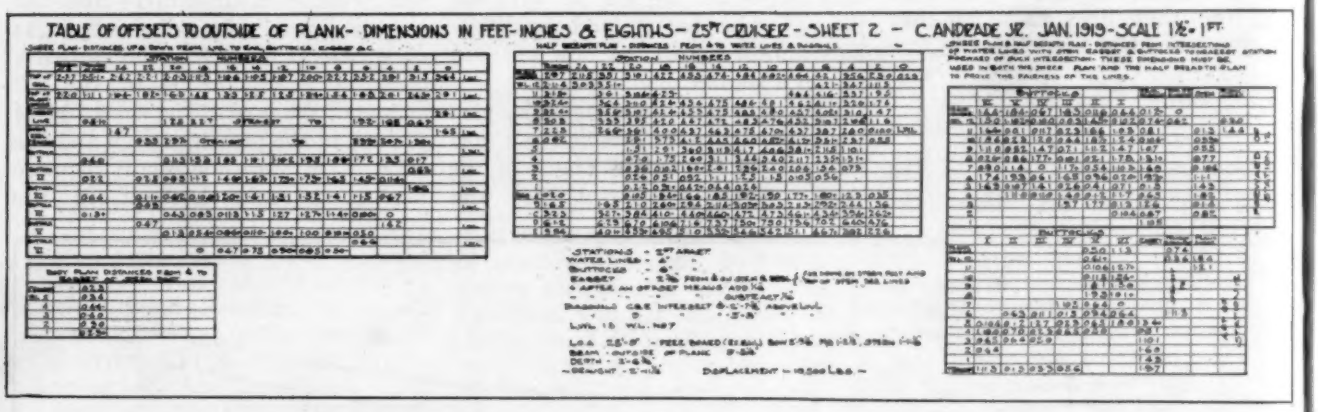


TABLE OF OFFSETS TO OUTSIDE OF PLANK- DIMENSIONS IN FEET-INCHES & EIGHTHS- 25FT CRUISER - SHEET 2 - C. ANDRADE JR. JAN. 1919 - SCALE 1½" = 1FT.

SHEET 3, CONSTRUCTION

The sheer plan on the construction sheet shows in detail the various structural features of the design.

At the stem-head there is a false rabbet line, which continues up from the real rabbet line, while the real rabbet at the stem-head is set aft somewhat. This increases the strength of the stem at its head, and obviates the chance of tearing the stem-head by the lateral pull of the gammon straps against the bowsprit.

The stem is one piece of hackmatack, sided 9 in. scarphed to the kelson and keel, and held in place by two 1 in. bronze bolts. Immediately aft of the stem is a heavy 4 in. white oak knee, which runs well out into the bilges. The kelson is sided 12 in. and has under it a metal keel which will be taken up more in detail in connection with sheets 4 and 8. Four inch white oak floors are set on every other frame. The bed logs are through fastened to the outside of the planking. The shaft log and stern post is made up of one oak knee sided 9 in. and is fastened with two smaller hackmatack knees to hackmatack chime pieces, which form the knuckle of the transom on the inside.

There are two bilge stringers on each side and a double clamp. The frames are butt cut white oak sided 1⅜ in. molded at head 1⅜ in. and at heel 2 in. The deck beams are spruce spaced 8 in. on centers, sided 1⅜ in. molded 2⅝ in. There are a number of extra heavy deck beams at point where the greatest strains occur, as shown in the sheer plan sheet 3.

The bottom plank is 1⅛ in. yellow pine, full length, no plank to be over 3 in. wide. The deck plank is 1 in. by 2 in. tongue and groove spruce, full length.

There is one novel feature about the construction of the cabin roof and cabin slide. These parts are built up of 3 ply spruce, ⅜ in. thick by 2 in. wide. The lowest layer is laid thwartships; the next layer, 45 degrees from the first; and the third layer, 90 degrees from the second. These layers are built to shape over a form which has the necessary crown, and as they are built up one over the other with this curve, they hold the curve when they are put into position on the boat. Thus, there are no beams for the cabin roof or the cabin slide. This construction saves double the moulding of the usual cabin roof beams, say a total of four inches in the present design, and this adds four inches to the headroom for the height of cabin house shown.

The seat with back rest and horizontal steering wheel is used in most of my designs. I find this the most restful form of steering gear that has been devised. The binnacle sets in place right under the wheel, and the whole rig is very handy. The bottom of the seat lifts up forming a hatch, and affords ready access to the exhaust pipe and steering gear for all purposes of adjustment and repair. After a long run on a hot day the lifting of this afterhatch quickly cools the lazerette.

The sheer plan of sheet 3 shows the lead of the exhaust pipe, which runs to the deck line and then turns down, discharging well above the water line. There is a Maxim silencer, through which a small amount of water is sent into the exhaust pipe. The rest of the exhaust water discharges into a bypass and empties into the main exhaust pipe close to the transom.

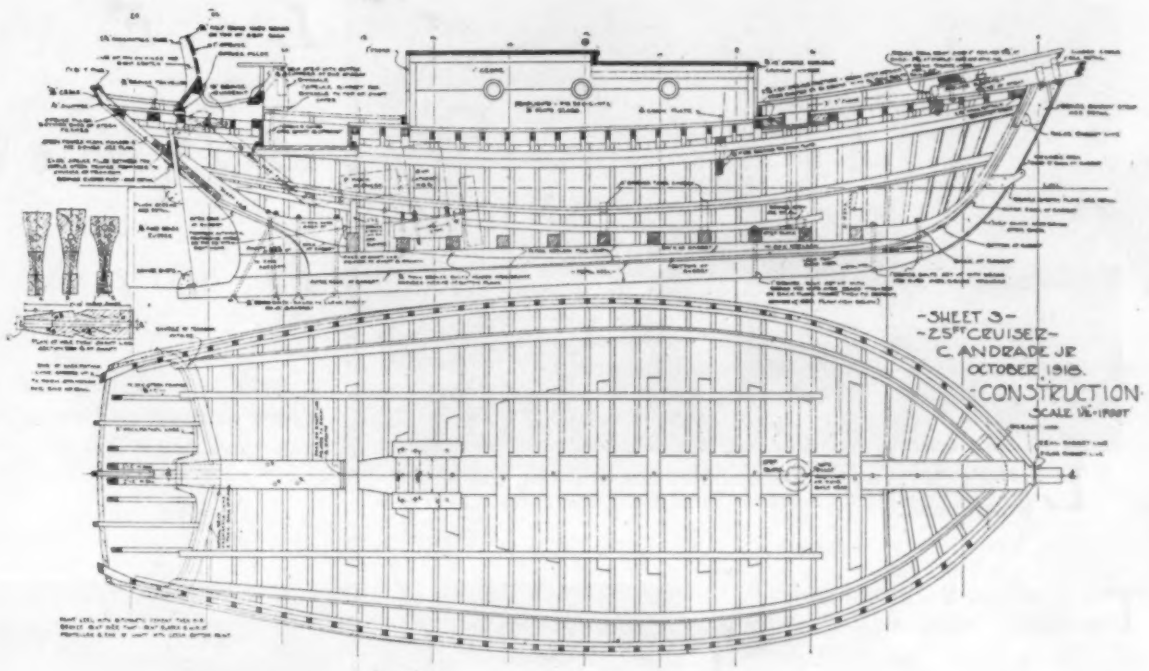
The construction of the cabin coaming at the base is somewhat unusual (sheer plan sheet 3). It consists of a spruce strip 1½ in. by 2½ in. which is through bolted through deck plank and deck beam. The cabin coaming is then screwed to the first mentioned spruce strip. The deck canvas runs under the spruce strip and up between the spruce strip and the cabin coaming. The advantage of this construction is that it does not cut down the clearance under the ends of the deck beams in the way of the cabin coaming. Indeed, the clearance runs right up to the deck plank between the ends of the deck beams.

The shaft log is shown in great detail and the lead of every bolt is given, showing clearance between the bolt and the shaft hole.

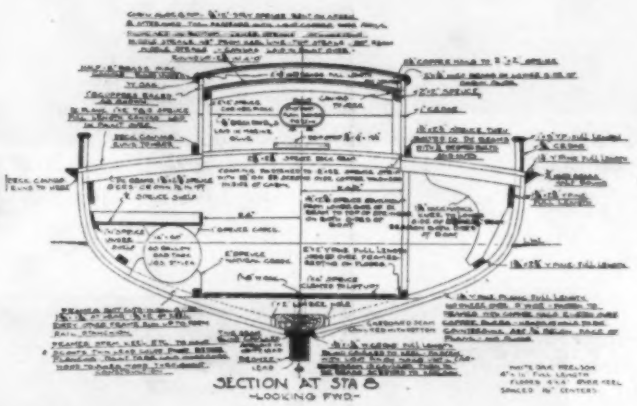
The rudder is fastened to the stock with four flush screws so that the stock may be unscrewed and raised, and the rudder taken out without disturbing the keel or skeg.

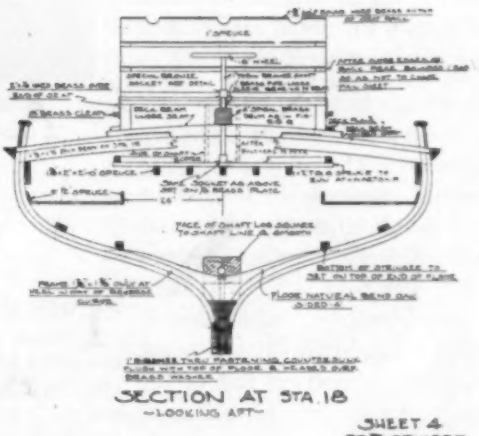
There is a full length metal keel which is somewhat unusual for this

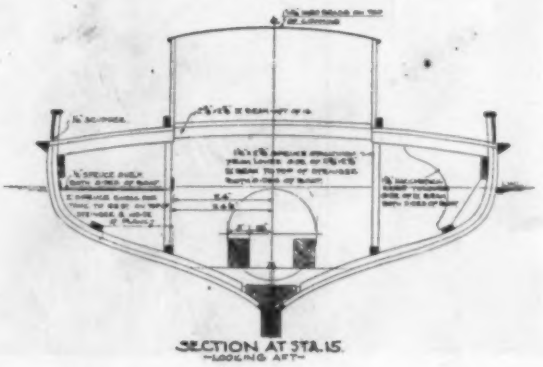
(Continued on page 104)

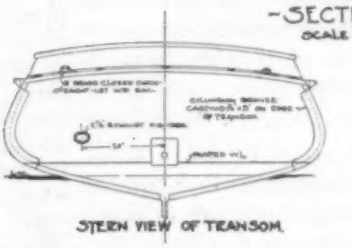


AN interesting boat is this newer-day **Spray**, and a study of these plans will reveal many unusual constructional details all of which have been carefully and most accurately devised. Here truly is a big little boat in which one might cruise anywhere.





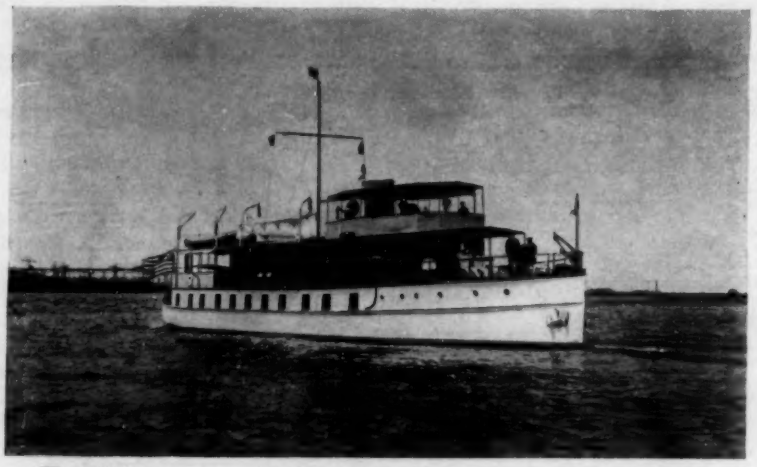




SHEET 4
25FT CRUISER
C. ANDRADE JR
OCTOBER 1918
-SECTIONS-
SCALE 1½"=1FOOT

L E O N A Well House

An ideal craft for use as a shore cruising, and a wonderful the warmth of Florida as the



LEONIE is a wonderful combination of room and seaworthiness.

THE Mathis Yacht Building Company built two sister boats, house-boats, one, the *Leonie*, for Mr. Murray Guggenheim of New York. There was considerable speculation as to which would be the better and faster boat. Two 125-150 h. p. Standard engines were installed in the *Leonie* and it is enough to say that Mr. Guggenheim was highly pleased with the results. The *Leonie* is 106 ft. long, 20 ft. beam, and 3 ft. 6 in. draft, and makes 11½ miles per hour.

Nothing has to be said of Mathis house-boats or Standard engines. The accompanying views of cabins and deck show the individual arrangement and charm of furnishings and decorations. The boat is built modern in every respect, with electric windlass rigged to lift the boats which are carried on top of the deck house extension. The aft deck is arranged to be entirely screened in from the deck house and aft, the screening being portable. The main deck house is arranged with chart room in the forward end, pantry abaft chart room, connected by dumb waiter to galley below. Abaft the pantry is the dining room, which opens up with large sliding doors into the living room in the after end of

A COOL spot despite the year around sunshine of Southern skies.

THE dining room is in the after end of the deck house and beautifully furnished. Here, practically encircled by windows, one may dine leisurely, the while enjoying the breeze of the sea and the vista of wave crests and sunlight.

N I E Equipped B o a t

summer home, yes, and for along vehicle in which to journey into winter months advance.

TWIN beds lend a homelike atmosphere to this stateroom.

THE owner's quarters are sumptuously appointed, large and well lighted.

LIKE the dining room this, the living room, is located in the main deck house. From the newel posts to the light fixtures, and from the cushions to the deck beams every detail is harmoniously blended.

the deck house. A stairway in the after end of the living room leads to the owner's quarters below, with four large double staterooms and bath room for each stateroom. The bath rooms are lined with opalite glass halfway up and paneled above. Separate intake ducts for ventilation are run from the owner's quarters aft and connected to a fan on top of bridge.

Forward of the owner's quarters is the engine room. The driving power is in two 125-150 h. p. 6-cylinder 8½ in. by 11 in. Standard air starting and reversing engines, the engine in a class of its own for power, instantaneous control, flexibility, smoothness, compactness. Then there is the Standard 4½ K. W. auxiliary set, comprising air compressor, bilge and fire pump and generator, which furnishes current for all the cabin and deck lights, search-lights, and plenty to spare for gala illumination. The engine room has a modern electric light plant and storage batteries, electric pump and electric driven ice plant. The ice plant besides making ice, cools the main ice box in the galley and pantry and ice box in the deck house.

The galley forward of the engine room is fitted out with the most modern appliances and is complete in every detail.

Wartime Cruising

How Bonnie Jean *Cruised the Maine Coast Despite the Kaiser and the War*

DR. WARREN B. MACK

(*Continued from August Yachting*)

THURSDAY morning was remarkably warm and still—one of those mornings when the sun sends down heat with a vengeance. There was hardly enough wind to ripple the water, but it came from the right direction for clearing weather, which, on this part of the coast, is north west. Any old yachtsman will understand the feeling that came to us as we plugged along toward Cape Rosier and up the coast to Castine—that delicious don't-care feeling which comes to all of us once in a while, when one rejoices in indolence and has no regard for time.

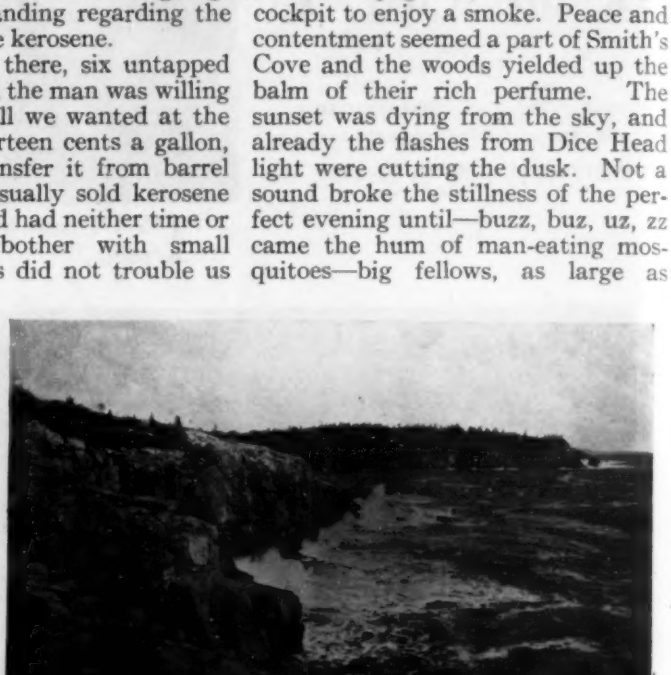
The black sloop followed us out under power, and her spotless bows, glistening in the sun, made a pretty picture. She must have had a good engine because she kept within hailing distance all the way and did not use the sails.

At the end of an hour or more we had our first view of historic Castine. It was a view that will not be forgotten for many a day to come and one we hope to see again. The sleepy old town lay on a southern slope of the peninsula, climbing sharply up from the water's edge to the plateau above. Off to one side stood the windmill, which is marked on the chart, standing out in bold relief against the skyline. Far away to the east rose the dim humps of Mount Desert and the solitary cone of Blue Hill. Southward, the flat expanse of Penobscot Bay sparkled and shone under a cloudless sky, with Long Island reposing in its midst, the Camden Hills forming a background. Straight ahead, smooth as a china cup, was one of the finest harbors on the whole coast; and off to port the mouth of the Penobscot River, which winds its way for a distance of about thirty-six miles up to the city of Bangor.

Seaport towns have a trick of taking on the color of the day's weather, and their citizens are as responsive as the barometer to every change and flaw. Just then, as we drew near the landing, the sunlight lay like thick yellow dust on the warehouses and docks, and a good-natured burr of voices from the group of idlers on the wharf gave notice that everybody was in good humor.

Supplies of all kinds were badly needed, so we scattered over Castine bound on diverse errands. We came back loaded with history, provisions, post cards, and the usual gewgaws sold at summer resorts. We then began negotiations with a garage man near the landing regarding the purchase of some kerosene.

The fuel was there, six untapped barrels of it, and the man was willing to let us have all we wanted at the cost price of thirteen cents a gallon, if we would transfer it from barrel to tanks. He usually sold kerosene in barrel lots, and had neither time or inclination to bother with small quantities. This did not trouble us much, for it was a trifling job to bore a hole in the barrel, stick in a faucet, and draw off twenty-four gallons, which filled the tanks. This was all we had used since leaving Booth Bay.



WHEN the wind blows the sea pounds at the rugged line of the Maine coast with the power of a titan, and woe be it to any disabled craft which drifts ashore there.

Castine Harbor is only a half mile wide, yet it contains so many choice anchorages that it was a puzzle for us to select the best one. Finally, acting on the advice of a fisherman, we decided on Smith's Cove, directly across from the town, where we found ourselves surrounded by trees and clam-flats. The cove was also a sort of repair station for sardine fishermen. On shore were some buildings in which the men repaired their nets and tackle. Anchored in the cove was a stake driver used for building the weirs, with a single cylinder engine installed to run the thing. Thousands of bushels of sardines are caught in these waters every season. They are really not sardines at all, but small herring; they are, however, carried to Eastport or Rockland by boat, where they are so nicely packed in oil that they pass for the real thing. All these fish are caught in weirs, it being against the law to net them.

After eating heartily of potato salad and spaghetti, we came into the cockpit to enjoy a smoke. Peace and contentment seemed a part of Smith's Cove and the woods yielded up the balm of their rich perfume. The sunset was dying from the sky, and already the flashes from Dice Head light were cutting the dusk. Not a sound broke the stillness of the perfect evening until—buzz, buz, uz, zz came the hum of man-eating mosquitoes—big fellows, as large as eagles, with their bayonets sharpened and ready to go over the top. They were preparing for an offensive, and everything pointed to a big drive. Evidently this first bunch liked our blood so well that the aeroplane scouts wirelessed the news to the gang in Jersey who came over in droves. Ned said the first cloud represented merely the class of '15; the Landstrum, being older and slower, probably wouldn't be over for ten or fifteen minutes. For sincerity, size, and punch these mosquitoes beat anything we had ever seen, or felt. We stood it a while until Mundy remembered the copper screens—which he had thoughtfully fitted to all openings before starting the cruise—and hastily put them up. The putting up of this defense brought forth roars of insect profanity, but once inside the cabin we were safe. One or two of the pests managed to elude our wildly waving arms and darted inside, but George soon spread their blood over the white enamel with a fly-swatter, thus making the place habitable for the night.

About seven hours before it was time to get up the next day, the fishermen's engines began their morning swan-song of "kapup, kapup, kapup—kapup, spitz, ka-zing," rudely breaking in on pleasant dreams and bringing the chief electrician and the engineer on deck to see what the disturbance was about. All the fishing boats but one were speeding away to begin the day's work; the boat that didn't go with the others apparently had a motor which wouldn't mote. The skipper, a lean old state o' Mainer with watery eyes, was striving hard to conceal some volcanic impulses, and was having more or less success, but the effort was raising Cain with his complexion. His face was as red as if he were going to choke. Almost every normal person has a natural aversion to starting, or trying to start, a balky motor in public; and the appearance of the two "city fellers" further enraged this engine mahout. He bent over and gave the fly-wheel another spiteful twist. Nothing happened but a hoarse sneeze from the carburetor. At this the old boy lost his temper altogether, and upraising a heavy Stillson wrench he hit the engine a sudden, savage blow.

"There, take that! You dolgurned blasted junk-heap!" He yelled shaking his fist. "D' ye think I ain't got nothin' to do but twist yer tail and hear ye grunt, you demnation skunk? By godfrey, if I had 'nother like you I'd go plumb out o' my haid! I've a durn good notion to hitch a line on ye and use you fer a moorin'! It's 'bout all ye're good for, anyway."

Having relieved his pent-up feelings to some extent, the old fellow jumped into his dory and rowed away, still grumbling.

Mundy and Ned slept through the whole rumpus, the boat reverberating with their snores. There was a lobster on board that had outlived its usefulness as an article of food. It was not actually rotten, but it was far enough gone to give off an odor all its own. George laid the smelly thing on Mundy's pillow, close to his widely opened mouth, and stood back to await developments. The results were all that could be desired. Mundy wrinkled his nose and took one sniff. One was enough to bring him out of his berth on the jump. To rouse the cook, we simply pulled the blankets off him and rolled him onto the floor. Then, dressed as we were born, we all dived over the boat's side and had a frolic in the water.

The remainder of the morning was spent digging clams, fishing, and in fooling around doing much of nothing. We took advantage of the blazing sun to dry the bedding, the carpet and our clothing; taking a sun bath ourselves at the same time. About one o'clock we began our return journey to the westward by making a three hour run through East Penobscot Bay to North Haven, where we bought a paper and read of the first great Allied victory.

After loafing in Perry's Cove until two o'clock Saturday, July 20th, we started for Muscongus, sailing over practically the same course we used coming down, except that we omitted Camden, and pulled into this pretty place at eight bells in the evening, which made it just a five-hour run.

On every cruise some incident occurs which stands out clearer in the mind's eye than any other—some little picture which perhaps does not amount to much, and yet one that helps a fellow to stand up under a hard winter's work when he thinks about it. All this applies to the village of Muscongus as we saw it that night when we tied up at the wharf.

MAINE, inland and along its shore, affords one of the finest playgrounds of the country and is of especial interest to the Yachtsmen because of its deep water ways and snug, rock guarded harbors.

We have stopped there so many times that the villagers know us, and this time we felt as though we had come home. To make it more realistic, the wharf was covered with our friends—men, women, children, and dogs. We flattered ourselves that they were there to watch us come in, but perhaps they came to see the beautiful sunset. Among those present, as the society editors put it, was Captain Thaddeus Clark our old friend the lobster fisherman. "Thad" is quite a character, in a way, and every inch of his make-up tells of time served on heaving decks. His massive shoulders and gripping hands, now bent and gnarled, suggest the strength bred by conflict with wind and wave. His face bears even more clearly the marks with which the sea ever stamps her own. His straight mouth and hard jaw clicks out his words—short and decisive. His clear blue eyes rove, now far, now near, with the restless watchfulness of the man who realizes that his life depends on how he reads every little telltale sign of the elements. He knows the stars as a landsman knows the street lights. To him they are torches illuminating the chart of the earth. Although Captain Clark is now retired and owns no boat larger than a Banks dory, he is one of those sea-dogs who can sail a yacht round a ten cent piece, or grope his way through the thickest fog with no guide but the sailor's sixth sense.

As we stepped ashore a smile crinkled "Thad's" weather-scarred features, and he bade us welcome as though he meant it. When we asked him how the lobsters were running and if he had any to spare, he replied:

"No, boys, I ain't; leastways I ain't got none for most folks. Lobsters is awful skeerce; but I guess mebbe I kin dig up a few for you fellers, arter a spell. But what's your rush? Come up and set a while; I want t' tell ye 'bout the school o' whales thet's been a-playin' around these waters the last week or so. They're raisin' Hell, I want to tell ye!"

We had appetites as ravenous as that of a chorus girl at one o'clock in the morning, so we persuaded the captain to give us the lobsters at once and come aboard while they cooked. He was in a talkative mood and gave us many a thrill during the evening, telling yarns of the sea and about whales.

The essential part of the whale story is as follows: A few days before Tom Brackett of New Harbor was fishing off Metinic Island in his sloop, *Alice and Leslie*, and he ran into a school of six whales, which were also chasing fish. They swam around his boat, sliding up out of the water until they seemed to stand on their tails, and then splashed back, making waves that rocked the sloop like an egg-shell. Tom paid little attention to the monsters, knowing that whales are generally harmless if not molested. After a while a large bull whale opened his mouth wide and charged

at full speed toward some fish. Brackett's thirty-foot seine boat stood in the way and the whale took a bite out of its middle, smashing it to kindling wood. After that Tom started his motor and went away from there.

John Anderson of Round Pond had a similar experience while night fishing near Monhegan Island; but the whales played around his boat all night and did not attempt to harm him. From all accounts it seemed as though the big fellows had come to stay all summer, and we decided to have a look at them if possible.

The next morning a Sabbath calm hung over Muscongus Harbor and over the country roundabout; the sleepy drone of bees in the meadow near at hand mingled agreeably with conversation from the gulls floating close to our boat, and all was as peaceful as a Quaker meeting. It was a rare day for a run to Monhegan Island—one of those flat, calm days which never come more than a few times in a summer. This side trip was one that had been on the program of every cruise during the past three or four years; but each time either accident, storm, or fog interfered with our plans.

M'nhiggon, as they call it locally, lies between nine and ten miles straight out to sea, where it rises like a dripping monster and looms against the sky. It is a notable island, for its history is associated with the most ancient discoveries of the North American coast; and it has ever been a landmark for the navigator since that memorable Easter Sunday in 1605 when Weymouth clewed up the sails of his ship the *Archangel* and let go her anchor in Monhegan Harbor. This heap of stone in mid-sea with its black and forbidding cliffs was formerly the headquarters for ships from all parts of the world and a port of refuge for the unfortunates on the whole coast. It was probably permanently occupied before Plymouth, though by a changing population or casual visitors rather than by colonists. Monhegan always was and always will be the home of fishermen, but it was once quite a trading post. It is said that the colonists of Plymouth were at one time compelled to come there for supplies, for it was the only place where trading ships put in. Of late a group of poets and painters, who care more for nature than society, have discovered it and come there to enjoy the mysterious charm of this Atlantic Garden of the Gods.

The ship's clock pealed out six bells before we had finished breakfast, which was served in the cockpit, and it was not until the best part of another hour had passed by that the engines were started. After ten minutes of sailing, the engineer pulled both switches and summoned the chief electrician, telling him that the generator chain was rubbing on metal and must be repaired. George put on a wry face and crawled between the engines and into a space where he had his nose on a hot exhaust pipe, his ear in the bilge, a sharp nut in his back, and the carburetor in his left hip pocket. From here a flow of adjectives came sizzling out that would never pass the censor unless thoroughly expurgated; but Georgie emerged at last, dripping with sweat and grease, saying there was more to do on a motor boat than there is on three automobiles and a kitchen.

We resumed our interrupted journey by running out to Kelp Ledge buoy, which we left about 12:30, steering due south. Within a short time the rounded hump of Monhegan showed dimly in the distance, looking for all the world like a sleeping whale warming his back in the sun. As we forged along, its huge spine drew nearer until we could make out the lighthouse perched high above the sea, then Manana Island, lying like a nursling beside the greater island, with its fog signal on top, and at last the whole rusty-red mass towered above a bunch of fishing boats anchored near the landward side. At first we could not see the harbor's entrance because of the high ledge, thrust across from Manana, which forms a natural breakwater at the northwest end of the channel between the two islands; but once in the lee of the larger one, we found the narrow opening which leads into the tiny space where the fishermen anchor their boats. It is not much of a harbor, for at the southwest it lies all open; and if it were not for Manana, a bald rock, chipped off at the sides, and rising sheer and stark from the water's edge, there would be none. For this reason the boat owners use very heavy post moorings and trust to luck when a sou'wester blows.

The harbor was just as we imagined it might be, only more picturesque if anything, and somehow we felt farther from home here than anywhere we had been. We thought it very likely that this feeling would be intensified in the winter time when the seas rushed through the harbor. The run from Kelp Ledge had taken an even hour, yet the land seemed far away. On the black rocks of Manana there is no landing; in place of one they use a line stretched beneath wooden supports to land coal and other supplies. Baskets are hung on the rope, filled from a boat, and hauled up to the building which houses the siren. The harbor was fairly packed with boats, it being Sunday and a day of rest for the fishermen. From the boats large enough to have living quarters came the wail of phonograph or concertina, and the crews were neatly shaved and dressed in shore-going clothes. These fellows are not of the "Ginney" breed seen around the Boston wharves but good wholesome Americans. The boats ran anywhere from twenty to seventy feet in length, and all were built to stand heavy weather.

There was one big black seiner named *Fox* lying at the wharf, with lines so perfect that any boat lover's mouth would water just to look at her. She was sixty-seven feet long, with the prettiest bow ever seen, a pilot house forward, and powered with a 25 H. P. Lathrop engine. She had been built at Wiscasset a short time before, and was a fine example of Maine boat building. She was underpowered and they intended to install a 45 H. P. Fairbanks-Morse as soon as it arrived.

The *Fox's* skipper was willing to talk and we found it very pleasant to loaf in the sun and listen to him. He declared that the whale stories were all true and that it was his own cousin's boat which was bitten in two. He and a party of friends were going out that very afternoon on the *Fox* to amuse themselves by shooting at whales with Winchester rifles. One of the party, an amateur photographer, planned on taking pictures while they were doing it.

(Continued on page 118)

PINE tree, boulder, and the clearest water vie with one another to create of Maine a paradise for the man who loves the great outdoors.

The Waterway League of America

Through organization Yachtsmen can best successfully combat legislation which is hostile to the best interest of their favorite sport—and the organization best equipped for this work is the Waterway League of America.

THE Waterway League of America was organized in 1909 by a number of yachtsmen within the area of Greater New York who realized the need of such concerted action for the advancement of yachting and the improvement of waterways as had never been afforded by yacht clubs or associations. Though having no affiliations with any yacht club, the membership of the League is made up of members of yacht clubs located about New York and the west end of Long Island Sound. Beginning in a very small way, the League has been able to accomplish much in the way of combatting hostile legislation, promoting favorable legislation, protecting the interests of yachtsmen, improving the waterways, lessening the pollution of waters, and furthering other movements beneficial alike to those who use the water for pleasure and for work.

With a membership which is largely local, the income of the League has been too limited for effective work in so large a field. While it has been represented by its officers and special delegations at all of the numerous conventions of national bodies from Boston to Miami, and before legislative bodies in Washington, Albany and Trenton, a great part of the expense of such attendance has been borne individually by the delegates.

The recent passage of the War Revenue Bill at Washington, with a tax on yachts which is not only grossly unfair to yachtsmen, but which, at the same time, defeats the very object of the bill, gives convincing demonstration of the necessity for vigilance and preparedness on the part of yachtsmen and for such organization as American yacht clubs, as thus far constituted, do not afford.

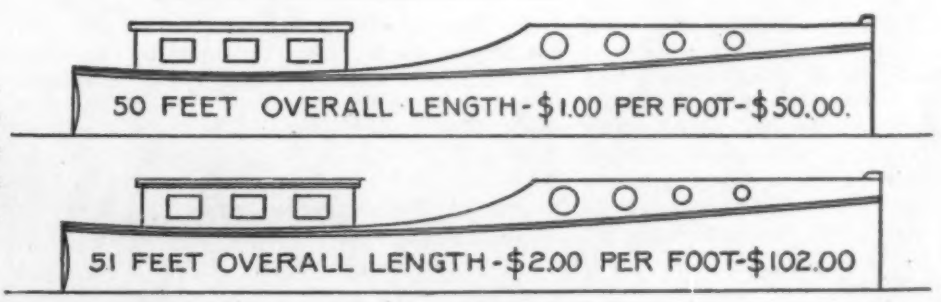
Assuming as a matter of course that all American yachtsmen are ready to bear their share of the national burdens, and that in the present emergency they do not object to a just tax, the law just enacted is not only unfair to them, but its specific provisions are so faulty as to fail in the great end in view: the raising of revenue. Even a cursory examination of the bill gives good reason for the belief that if American yachtsmen had been advised in time of the proposed legislation, and represented in Washington by a duly authorized body, the actual conditions of the case might have been made plain to the framers of the bill and a very different result attained.

Even as it was, with only an eleventh-hour notice, the officers of the Waterway League paid a hurried visit to Washington and succeeded in effecting a change which greatly lessens the burden of the owners of the smaller yachts.

One aim of the League has been the creation of a special fund sufficient to enable the officers to obtain advance information of all proposed legislation, national and local, which is inimical to yachtsmen and to those who follow the water for business; and also to defray the traveling expenses of those representatives of the League who give both time and knowledge freely in opposing such legislation. With a local membership and nominal dues, this is impossible at the present time, and it is only through the liberality of its former officers in supplementing the necessarily limited appropriations from the League treasury that so much has been accomplished.

Some of the smaller clubs familiar with the good work of the League have voluntarily subscribed the sum of ten dollars as an annual subscription, and it is expected that other clubs and the yachting trade will display a similar interest in this matter so vital to the growth of yachting. Your aid as an individual yachtsman and yacht owner will be equally valuable.

THIS is a fair example of unfair taxation. Join the Waterway League and help correct it.



Twenty-five foot *Spray*

(*Continued from page 96*)

type of boat, and which is shown also on sheets 4 and 8.

A cast bronze mast step rests on top of floor No. 6 and a step block 12 in. by 12 in. by 4 in. giving a solid foundation for the heel of the mast.

SHEET 4, SECTIONS

This sheet gives the transverse construction sections on stations 8, 15 and 18, also a stern view of the transom.

The metal keel presents an unusual problem of construction in the matter of making a water tight joint between the wooden garboard and the metal keel. Instead of bringing the yellow pine garboard against the top of the metal keel, a strip of white cedar 1⅛ in. thick by 1⅜ in. wide is run full length between the lead top of the keel and the garboard strake. The side of this white cedar strip, which comes against the lead top of the keel, is blind-caulked and laid in white lead. The strip is then fastened temporarily with light finish nails. The garboard strake is fastened in place, and cotton caulking is inserted in the usual way between the garboard strake and the white cedar strip. After this, light brass screws are permanently set from the white cedar strip into the kelson. Experience under similar conditions has proven that this form of construction will make a permanently tight joint.

It would be a mistake to run the yellow pine garboard down to the metal keel and then put caulking between the metal keel and the yellow pine garboard. Such a joint would not hold tight.

Section 8 shows a removable light spruce shelf set on chocks over the gasoline tank.

Hackmatack knees are hung in way of the heavy spruce deck beams at the forward and after ends of the cabin house. Stanchions run from the lower bilge stringer to the deck beams in way of the hackmatack knees. This construction insures great rigidity and ties the boat together in a very satisfactory manner.

Section 18 shows part of the detail of the steering gear.

Any one of the three notches at the top of the back rest on the seat will hold the boom in place when reefing in rough water.

Section 18 also shows the forward face of the shaft log and the natural bend knee which runs across from one bilge stringer to the other, tying the boat together at the stern, as the 4 in. knee ties her just aft of the stem.

The stern view of the transom gives the position of the exhaust outlet, the rudder port, etc., and shows two bronze castings to protect the ends of the planking at the knuckle of the transom against small boats coming alongside.

To Be Continued
In October Yachting

Early Morning

THE Detroit Yacht Club is like the river on which it stands; it presents a different aspect every time you look at it. The usual thing is for sailors to get over here in time to get a sailor's lunch and then spend the afternoon in sailing. They get to know one aspect; it is a very good one, but they should try some of the others. The early morning is one of them. Begin it the night before. Instead of going home in the evening, look around and see if you have friends sleeping on their boat and get in with them if they have room. Boat owners have told me they would rather lend the key of their cabin to some one they know, than to have the boat stand empty at its moorings. A yacht is a fine sleeping place on a summer night; it may be too warm to breathe in the city, but still you will find it comfortable to have a blanket to sleep under in the cabin. The only stand in you need is "get acquainted" with the most approachable people in the world, sailors. Show them that you are ready to give them a hand and they will give you both hands; it is worth while.

You wake up in the morning earlier than you do on shore. The water is tempting. There is the best swim in the world, the swim before breakfast and the appetite afterwards. There are a dozen other fellows in and some girls. The wonder is that there are not fifty of them. After breakfast a few cat boats steal out, men begin to come down from the city to get ready for the day's sport, but they have missed the cream of the day, the delicious quiet of the early hours, promising things. And the day makes good; you get just as much from the promises as you are worth and you are worth more each time you try.

Mr. William Atkin,
Editor Yachting.

Dear Sir:—

Being an editor myself, I know the helpfulness of an occasional word of encouragement from your subscribers, and I want to add mine to those you are getting. You are improving the journal steadily, and I know what it means to do so, because it takes money to do anything, and these times are none too favorable for publishers.

John G. Hanna.

Navy Blue

THE blue color so prominent in the uniforms of almost all mariners is of hoary origin. Vegetins, in his fifth book on the military affairs of the Romans, traces the origin of the color to the Veneti, an ancient people dwelling near the coast of Biscay, and well versed in seamanship. It was customary among them to paint their outgoing ships as well as the masts and sails with a blue color; also their sailors wore blue uniforms. According to our author, the Latin word "Venetus," which was both the name of the color and that of the people, points to its origin. From the Veneti the custom was adopted by the Romans. Thus the son of Pompeius, after defeating Cæsar's fleet in a naval battle, wore the navy blue, although entitled to the purple. The Veneti were subdued by Cæsar after a severe maritime war in 56 B. C.

In Florida Waters—

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The many advantages which these Express Cruisers offer are due, in large measure, to their standardized method of construction, which has made possible perfection of detail throughout.

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Great Lakes Express Cruisers

The Stars as Aids to Navigation

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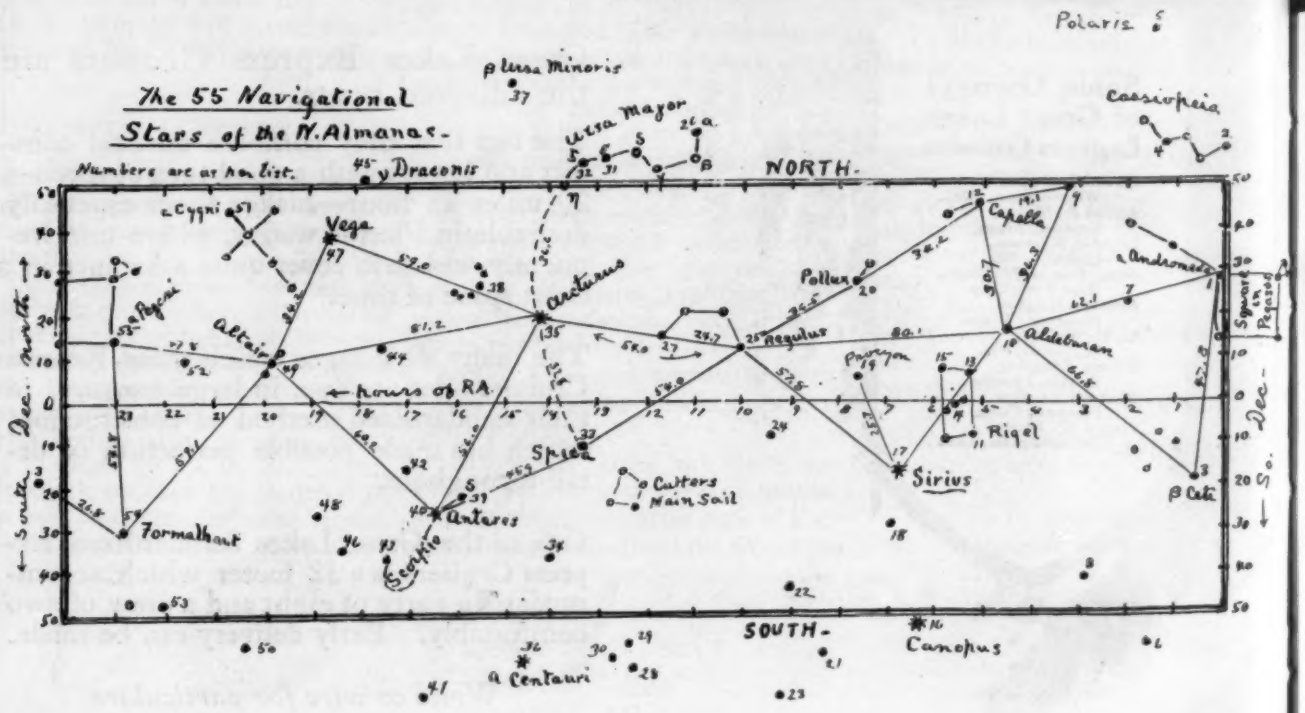
PART I



THE stars have much to recommend them to the navigator. They are always convenient. At times the ability to use them is of first-class importance. They are at hand when the sun is not available, and a "fix" can be obtained from two or three of them without the delay of two hours or more, which is necessary when the sun is the object observed.

The Nautical Almanac on pages 94 and 95 gives the apparent places of fifty-five of the brightest stars for the first day of each month in the year. At the back of the Almanac is a star map showing the position of such stars. A modified copy of this map is reproduced herewith. If the successive positions of these stars are plotted, the apparent yearly track of the stars will appear as in Figure 1. An idea of the small area covered by these eccentric twists and turns may be had by remembering that the moon has an approximate diameter of 30 minutes of arc, and these annual tracks are each confined to the space of a minute or two of arc. They will be referred to again but at this point it is only necessary to suggest that at the above pages of the Almanac will be found the R A and declination of these stars for each month.

The use of the stars is limited, of course, to such times as the horizon is well defined, at twilight, morning and evening or when the moon gives sufficient light for the purpose.

Aside from their use for obtaining the position of a ship at sea, they are useful for making certain tests of sextants and for practice work by students. These points will be postponed for the moment and consideration will be given to the most simple use of the stars for obtaining Latitude and for a Fix with the St. Hilaire problem.

Convenient stars for obtaining a meridian altitude may be decided on by a casual view of the heavens, if the stars are known to the navigator. Or he may roughly estimate the local mean time at the ship and examine the Table on page 96 of the Almanac, "The Meridian Transit of Stars." It is true that this Table is strictly the Greenwich Mean Time of transit. But the maximum error of using it as a Local Mean Time of transit is always less than two minutes and the Table is only used to obtain a hint as to what stars are near the local meridian. Three or four of these may be found available within the hour and of these one is to be selected, having regard to the approximate latitude of the ship and the declination of the star, so as to obtain a moderate altitude for observation.

MERIDIAN ALTITUDE

The true zenith distance of the star on the meridian combined with its declination, as given on page 95 of the Almanac, give as a result the latitude of the ship in exactly the same way as does a similar observation of the sun, except that there is no parallax, no semi-diameter, and no calculation of time from which to figure a rapidly changing declination. The declination of the star changes only one or two-tenths of a minute of arc in a month, as will be evident from said page of the Almanac. The only corrections necessary are for index error and from Table 46, Bowditch, for combined dip and refraction. The watch time need not be taken. The sextant is manipulated as for the sun until the star "dips" below the horizon. The form of the problem is as follows:

At sea; 15th August, 1919. Observed Altitude * Altair, bearing south. Index correction +2′ 00″. Height of eye 30 ft. (D R Lat. 43° 10′ N.)

Obs. Alt.	°	′	″
Table 46			
Index Corr. + or—			
Total Corr. + or—			
True Alt.			
90° = 89	59	60	
Zenith Dist.			N
Declination			N
Lat. of ship			

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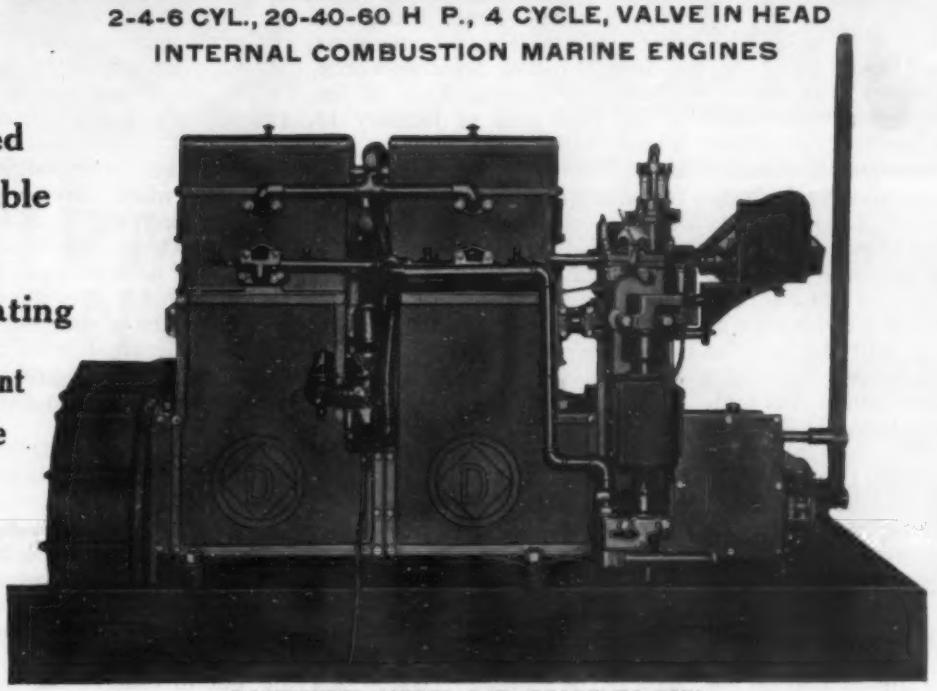

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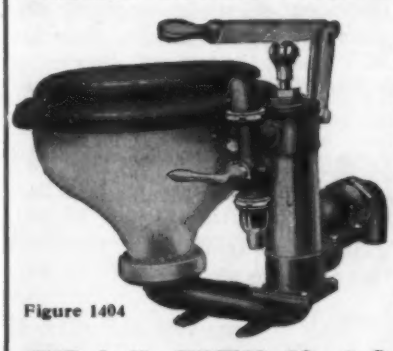

Figure 1404

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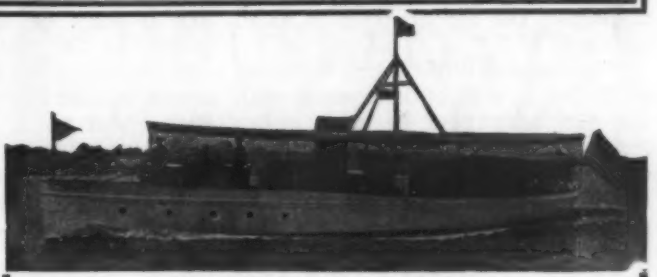

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6-Cylinder, 6½" x 8½" 65 H.P.
Twentieth Century Engine

N. Y. Yacht
Launch
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Morris Heights
NEW YORK

As with the sun, if the star bears south, the zenith distance is marked north, and if the declination is also north, they are added. If one of these quantities is north and the other south, the difference is taken and the resulting latitude takes the letter of the one numerically greater.

ST. HILAIRE PROBLEM

Beyond all question the most important navigation problem is that of St. Hilaire, whether it consists of the observation of a single body to obtain a Summer Line or of at least two bodies to obtain a fix. The three quantities required for the solution of the problem are the hour angle of the observed body, known as H A or t, the D R latitude, and the declination of the body. Incidental to the main problem and in the finding of the quantity t, the D R longitude is used.

There is no difference between the problem as applied to the sun and as applied to the stars, except in the finding of the hour angle *t* and the possible necessity of utilizing H O 120 instead of H O 71 for finding the azimuth.

In the case of the stars there is no need of correcting the declination nor of finding and correcting the equation of time. It is, of course, necessary to correct the chronometer so as to obtain G M T.

The simplicity of finding the hour angle for a star as compared with the sun may best be seen in an example. Assuming that the corrected chronometer time of the observation, i. e. G M T has been found, we have:

Given a day of the year, the Right Ascension of the Mean Sun (R A M S) is found on page 2 of the Almanac, and given the Greenwich Mean Time of such day the "Reduction page 2" is found from the table at the foot of such page. These two quantities added to G M T always give Greenwich Sidereal Time, though as in this example, it may be necessary to deduct 24 hours. In other words, the 43rd hour, Sidereal Time of Jan. 14 is the 19th hour of January 15. It would have been equally correct, though not so convenient to note the fact that one-third of an hour was lacking of Greenwich Mean Noon of the 15th January, and that 3.3 seconds of correction should be taken from the R A M S of the 15th to obtain Greenwich Sidereal Time. That is to say, R A M S 15th. 19h 35m 32.9s−3⅓ gives the same G S T as above. West D R Longitude in hours is deducted, or East Longitude is added, to obtain Local Sidereal Time, L S T. This last is combined with the Right Ascension of the Star as taken for the month from p. 94 of the Almanac. In all cases the difference between the two is taken and it is not material which is larger nor to consider for the purpose of the problem whether the star is east or west of the meridian, though this will be important in looking up its azimuth. If the difference is large, e. g. 21h it may be deducted from 24 hours, as the sum of the easterly and westerly hour angles is always 24 hours, and the problem may be solved with either angle. A glance at the haversine tables will show this.

In the case of the sun, to G. M. T. is applied the longitude and the corrected equation of time. In the case of a star, to the G. M. T. is applied the R A M S and correction (p. 2 of the Almanac) and the longitude. The difference between the quantity so obtained and the R A of the star will be the hour angle,—known as t of the problem. The only matters taken from the Almanac when a star problem is being worked out are from page 2, and pages 94 and 95, and are much more quickly disposed of than would be the declination of the sun and equation of time with their hourly differences. Moreover, when two or three stars are observed within a few minutes of each other, the local sidereal time of the first problem has only to be altered by the minute or two of difference in time between the sights as contrasted with a complete reworking of the problem in the case of the sun after a two hour interval.

STAR

	h.	m.	s.
G M T Jan. 14	23	40	00
R A M S	19	31	36.3
Reduct p. 2		3	53.3
G S T	43	15	29.6
deduct	24		
	19	15	29.6
D R Long 90° W	6	00	00
L S T	13	15	29.6
R A *a Lyra	18	34	10.7
t =	5	18	41.1

SUN

	h.	m.	s.
G M T 14th Jan.	23	40	00
or 15th Jan	0	20	00 = ⅓ h
G M T	23	40	00
D R Long W 45° 15′	3	01	00
L M T	20	39	00
Eq of T		9	11.1
L A T	20	29	48.9
t =	3	30	11.1

	Dec.	H. D	Eq. of T.	H D.
A. M. noon Jan 15	S 21° 18′ .9	N 0′ .4	(—) to M.T. 9m 11.4s	+0s.9
Corr S.	0 .1	G M T −⅓h	Corr. −.3	−⅓h.
S.	21° 19′ .0	Corr. S. 0.1	−9 11 .1	Corr −0 3

EX-MERIDIAN ALTITUDE

When a single ex-meridian altitude of a star is taken it is not necessary to work out in advance the Local Mean Time of transit. Watch Time is taken at the moment of observation and the hour angle is worked out in exactly the same way as for the St. Hilaire star problem above illustrated. It becomes the quantity t in Table 27 of Bowditch. The problem is distinctly easier to solve than when the sun is the object observed, and a computation is necessary by reason of changing declination and equation of time.

LATITUDE BY ALTITUDE OF POLARIS

In moderate northern latitudes the pole star is particularly convenient for latitude. Use the simple problem and table found on page 107 of the Nautical Almanac (1919). A slight modification of the problem may be here suggested, as Local Mean Time on Ship Board is not as reliable as the G M T furnished by the chronometer. Taking the Almanac illustration, it is evident from the longitude that the corrected chronometer time i. e. G M T was at the time of observation 15h 36m 30s, and proceed as follows:

	h	m	s
G M T	15	36	30
Reduction p. 2 Alm		2	34
R A M S p. 2 Alm	5	11	10
G S T	20	50	14
Long. W	4	56	
L S T	15	54	14

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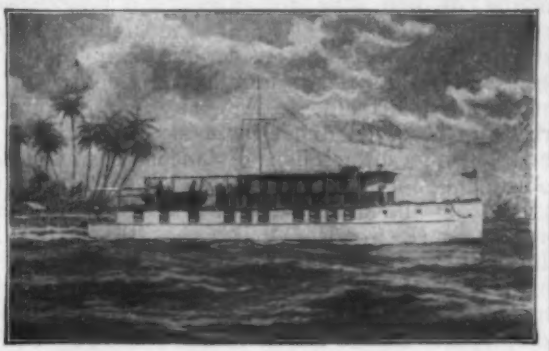
COMFORT



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INTERSTELLAR DISTANCES

The stars offer to students an excellent opportunity for practice with the sextant, and also in calculation of the St. Hilaire problem. Although the student may have the use of a sextant, he is not always within reach of a sea horizon and is still less likely to have possession of an artificial horizon. Under these circumstances he will find the measurement of the distance between stars good training. The bringing of one star to another, particularly when they lie so that the sextant is to be held at a considerable angle, will do much to familiarize him with the instrument. He may verify the observed angle by using the following interstellar distance problem.

Haver I S D = haver $(d_1 \sim d_2)$ + cos d_1 cos d_2 haver (R $A_1 \sim$ R A_2)

In the foregoing, d_1 and R A_1 are the declination and right ascension respectively of the first star, and d_2 and R A_2 are likewise the declination and right ascension respectively of the second star. The difference between the two rights ascensions is a quantity which exactly corresponds to t in the St. Hilaire problem. One of the star declinations replaces Lat. in that problem, and in fact Lat. is the declination of the Zenith. The angle corresponding to the nat haver I S D is the counterpart of the zenith distance in the St. Hilaire problem. From the standpoint of spherical trigonometry, there is no difference between the two problems.

This equation in use may be illustrated as follows:

	h m s	
Arcturus R A	=14 11 58.3	
Spica R A. . . .	=13 20 56.3	
of their difference, log haver	0 51 2.0	=8.09149
log cos dec.	° ′ ″	
Arcturus. . .	+19 36 00	=9.97408
log cos dec.		
Spica.	−10 44 24	=9.99232
log haver θ		=8.05789
nat haver θ		=0.01142
	° ′ ″	
nat haver $(d_1 \sim d_2)$	30 20 24	=0.06849
I. S. D. 32° 50′ 30″ = nat haver		=0.07991

THE STAR CHART

The star map herewith, as already mentioned, is based upon that to be found in the back of the Nautical Almanac. The map is intended to show primarily the fifty-five stars whose apparent positions are given at pages 94 and 95 of the Almanac. For the present purpose, the writer considered it advisable to make its limits as a map at 50° declination North and South. No stars south of those limits are visible in the latitude of New York, and north of those limits, aside from the Great Dipper and Cassiopeia, there are only two stars of the list. There is also the further reason that beyond 50° the distortation on such a map renders it nearly useless so far as giving an appearance of the heavens is concerned. The stars of the list lying outside of 50° are noted beyond the map limits, so that each taken by itself may have indicated its approximate dec, and R A.

In using the map to locate stars, the observer faces south and holds the map a little above the level of his eye. He should very roughly estimate L S T and finding that hour on the midline of the map should look for stars of that hour at or very near his Local Meridian. At Sea, Captain Lecky recommends carrying a watch set to G M T. To the time which such a watch would show is to be added the R A M S for the day from page 2 of the Almanac and the Longitude in hours as roughly estimated. (If Longitude West, subtract.) These three items combined give an approximate L S T. On land or in port, any clock or watch will provide the L M T, if it is corrected by deducting the daylight saving hour and by adding or subtracting the difference in Longitude between the Standard Meridian and that of the locality. These two corrections being once estimated and combined, will not have to be changed. For New York City they may be taken as 56 m to be deducted. To the time as thus corrected is to be added the R A M S, which may be mentally calculated by allowing two hours for each full month since the 23rd of March last and one hour for an additional half month, together with four minutes for each of the odd remaining days.

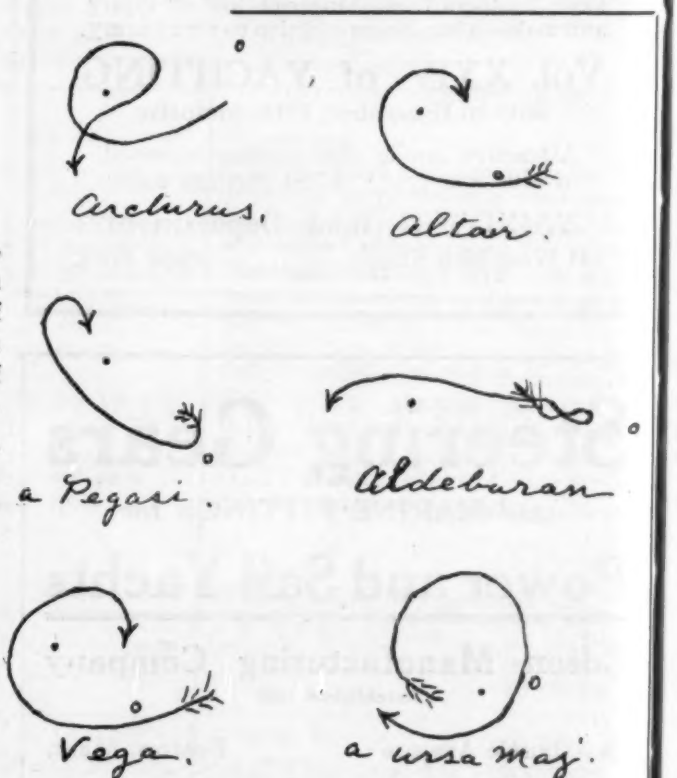
For example, the L S T at New York at about 11 P. M. on 10th June is approximately a follows:

	h m s
Clock time.	10 40 00
Less daylight saving hour, diminished by 4 min. of Longitude east of the 75 Meridian.	56
L M T.	9 44 00
R A M S, 2 mo. 4 hr. 15 da. 1 hr. 3 12 m.	5 12 00
L S T.	14 56 00

If the observer finds the sidereal hour small, e. g. 1, 2, 3, etc., after examining the stars to the east of him, which lie in the hours 3, 4 and 5, he should bring the left end of the map in front of him for stars that are in the 23rd, 22nd and 21st hours, which will be a little west of his meridian.

For the purposes of navigation, the peculiar figures of the constellations

ANNUAL Changes in R A and dec. of stars as given on pp. 94, 95 of Almanac — O = mean position 1st Jan. 1919. ₀ = mean position 1st Jan. 1920.



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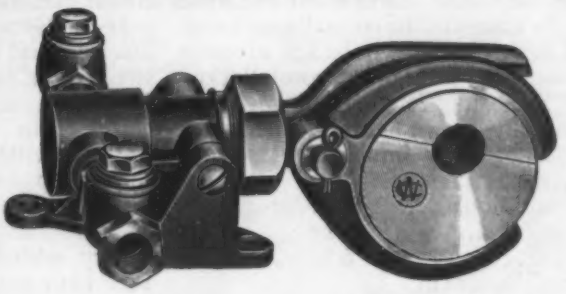

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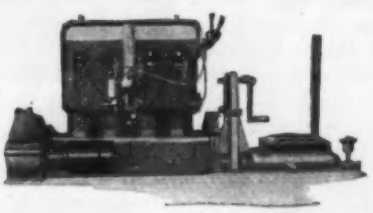

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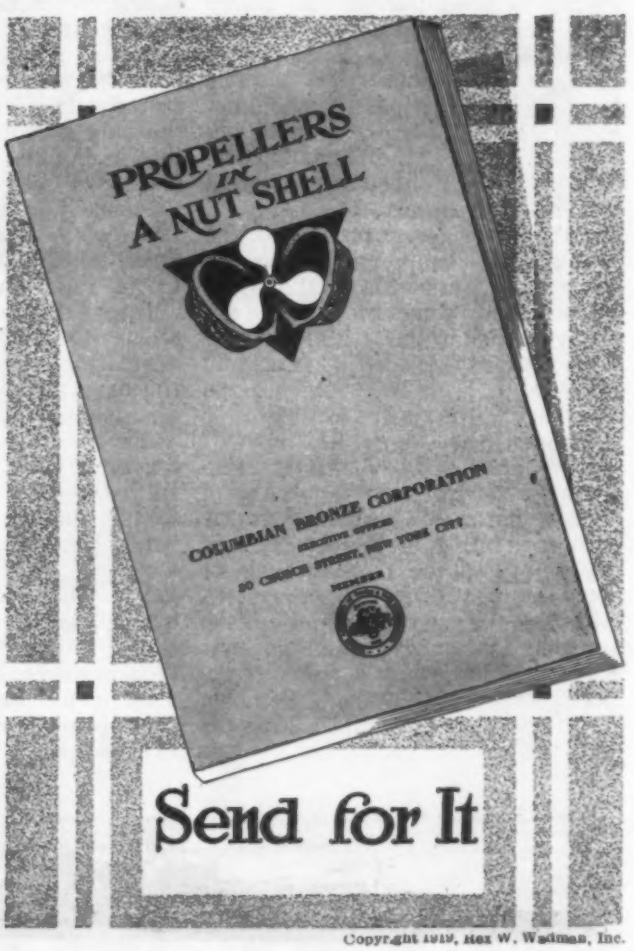

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may be wholly disregarded and most of the names of the constellations may be ignored. One will be apt to retain in his mind three of the constellations by name and four well defined and generally known figures, which in the order of their importance may be named as follows:

Great Dipper..R A	12 hr	dec. 60°N
Cassiopeia.....	1 hr	60° N
Orion.....	5 hr	0°
Great Square in Pegasus.....	23 hr	20° N
Cross in Cygnus	20 hr	30° N
Scorpio.....	17 hr	30° S
Little Dipper..	15 hr	80° N

There are two pairs of bright stars, each pair separated by a few degrees. Of these, Capella, near the 5th hour, is a little north of the zenith at New York when on the meridian and is considerably brighter than its companion, while Castor and Pollux are somewhat south of the zenith in the 7th hour and are nearer together and more nearly equal in brilliancy. Altair, near the 20th hour, and 10° N declination, has an attendant star on opposite sides, one of which is somewhat brighter than the other and both of them much inferior to Altair. By repeated observation, the appearance of these figures and star pairs and their approximate dimensions become fixed in the mind and the sight of any one of them will give a clue to what part of the starry heavens is overhead.

The leading star of Cassiopeia is close to the Zero hour of R A and this hour circle carried past the pole becomes the 12th hour, running between γ and δ of the Great Dipper. The pole star is about 1¼ degrees from the pole toward δ of Cassiopeia, and these two stars together with the pole and ζ of the Great Dipper are all in line. Cassiopeia or the Great Dipper and sometimes both are always visible in the latitude of New York. A fairly close estimate may be made of L S T by observing the position of either in the heavens.

If Cassiopeia is high, just below it in declination will be found the great square of Pegasus, shown on the map, with a line of large stars from one corner, pointing in the direction of the pole; and the small triangle of stars at the other upper corner. Although the square is mainly in the constellation of Pegasus, the first star on the list, which is at one of the north corners of the square, is known as α Andromedae, and it happens that the last star on the list is in the corner diagonally opposite.

If the Great Dipper is high in the heavens, and if the eye continues the sweep of its handle on the same curve for a distance about equal to the length of the handle, the brilliant star Arcturus will be found, and continuing the sweep for a somewhat greater distance, the line will reach Spica, a somewhat less brilliant star of silvery whiteness. Regulus of the 10th hour and Denebola of the 12th hour, with two stars of slightly higher declination and not quite so bright, mark the corners of a trapezoid.

Near the 16th hour, nor far from Arcturus, in a line toward Vega, is the small constellation of the Northern Crown, which has the form of a crescent moon, bowed with its horns away from Arcturus, and in it one bright star of the list. This star is not very conspicuous. Vega, or by its other name, α Lyrae, is a very brilliant star, almost overhead in the latitude of New York in August evenings. A triangle of great size may be imagined with Vega, Altair and Arcturus at its vertices. The other stars may be found by noting their triangular relation on the map, e. g., knowing α Pegasi by its position in the great square and Altair by its two attendant stars, and noting the shape, position and size of the triangle on the map, which has Formalhaut at one vertex, this star will be easily located. In fact the large stars are as a rule so scattered that this rough form of eye surveying is quite sufficient for their identification. Perhaps the only exception would be in the case of Pollux, which might be confused with Castor, if both were not on the map. In passing, attention might be called to the four stars not far from Spica which have the title of the Cutter's Mainsail.

It is decidedly better for the reader to do his own mental triangulating. The lines laid out upon the map were intended to give the approximate distances for the convenience of those who might use the sextant in verifying the identification. In this case the sextant should be set to the number of degrees indicated before being directed at either of the stars. In identifying stars, a pencil held at about fifteen inches from the eye will assist at a rough estimate of the distances between stars, one inch on the pencil being nearly equivalent to five degrees. For example, the distance over all between the extreme points of the Great Dipper is 26 ° which on the pencil should be 5¼ inches. The spread of the upper part of the bowl is 10°, or about 2 inches.

Aldebaran and Antares are stars of a reddish tinge. Vega is a blue-white, Spica is silvery white, Capella yellowish, while Sirius and our own Sun are of a medium whiteness. As a matter of fact, these tints probably indicate age. The reddish stars being oldest and the blue-white the youngest. Among the faint stars there are other tints some of them showing as red as rubies, not to mention the fact that there are also extinct suns whose presence is only known by the effects they produce on other stars.

Of the planets, Jupiter, Saturn, Venus and Mars might be mistaken for navigational stars. The orbits of Jupiter and Saturn are so large and their motion in their orbits so comparatively slow that they are not difficult to keep track of. Venus and Mars change their positions quite rapidly, though Venus, having an orbit inside that of the earth never gets very far from the sun. Mars has a reddish glow. The planets do not twinkle as the stars do, but even the stars do not always twinkle, particularly when near the zenith. It is safe therefore to locate the planets by their positions as given in the Almanac, and note how they appear among the stars from time to time. The planets by their brilliancy and consequent early appearance in twilight will, no doubt, commend themselves, as objects for observation. They present the same problem as the stars, except that hourly differences for their changing declination and right ascension will have to be computed, e. g. Jupiter, page 143 of Bowditch.

The path of the sun among the stars has been omitted from the map as being unnecessary for the present purpose. Only two of the stars in the list of fifty-five change their positions relatively to the other stars by an amount which may be considered material. Arcturus has an annual motion of 2.1″ and Sirius of 1.2″. Consequently in thirty years Arcturus will have moved a little more than one minute of arc and Sirius about 36″. In the case of these two stars the interstellar distances contained in *"Wrinkles"* by Captain Lecky, and calculated for 1895, may now need slight modification.

(Continued on page 123)

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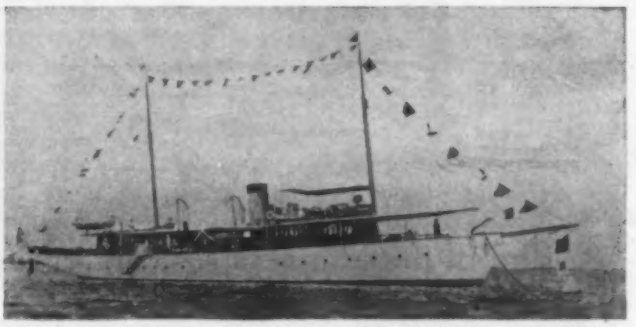
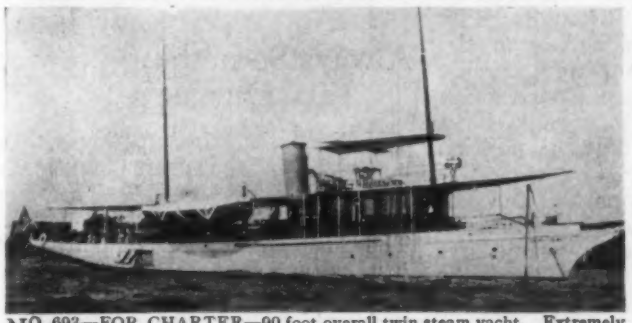
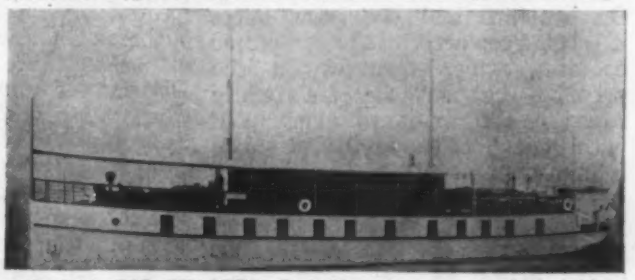
NO. 5880—FOR SALE—Most commodious 107 foot cruising houseboat. Built 1917. Luxuriously furnished. Two double and four single staterooms. Three bathrooms. Hot water heated. New electric plant. Now in commission. Gielow & Orr, 52 Broadway, New York City.



NO. 1656—FOR SALE—Attractive 131′ x 17′ x 6′ 9″ steam yacht. Dining room and social hall on deck; three double and three single staterooms; two bathrooms; good condition. Gielow & Orr, 52 Broadway, New York City.



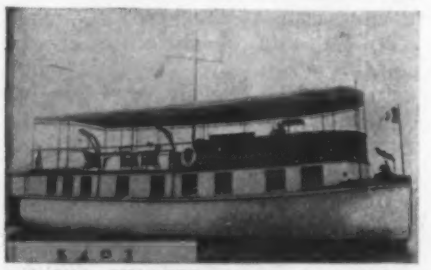
NO. 693—FOR CHARTER—90 foot overall twin steam yacht. Extremely attractive craft. Bath room, double stateroom, large cabin with four comfortable berths; sleeping accommodations for six in owner's party; dining room in deckhouse. Gielow & Orr, 52 Broadway, New York City.



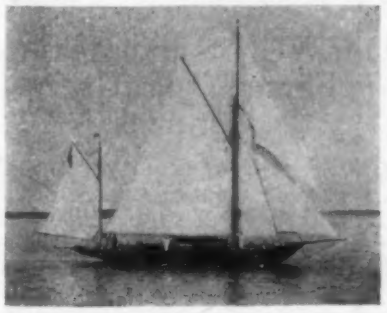
NO. 5006—FOR CHARTER—Desirable twin screw 100 foot cruising houseboat. Speed 12 miles. Deck dining room and lounging room. Seven staterooms, three bathrooms. Now in commission. Gielow & Orr, 25 Broadway, New York City.

NO. 4527—FOR SALE—Attractive 40 foot raised deck cruiser. Sterling engine, with new electric self-starter. Sleeping accommodations, 5 persons. Thoroughly overhauled, now in commission. Gielow & Orr, 52 Broadway, New York City.

NO. 2549—FOR SALE—Attractive keel cruising sloop, 50 foot deck, 30 feet W. L. 11 foot beam. Built by Lawley. Fully equipped, perfect condition. Inspectable Boston. Gielow & Orr, 52 Broadway, N. Y. City.



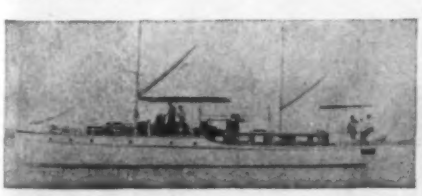
NO. 5403—CHARTER—Consider Sale—Desirable 50-foot cruising house boat, 4 staterooms. Standard motor, bridge control, recent build of extra heavy construction. Suitable Northern and Southern cruising. Gielow & Orr, 52 Broadway, New York City.



NO. 4301—FOR SALE—Finest off shore cruising yawl available; 45 feet W. L.; 15 feet beam; draft 8 feet. Built to Lloyds specifications, class 100 AL, for West Indies cruising. Double and single stateroom, saloon, accommodates five. Complete equipment. Finest condition. In commission near New York. Owner will consider trade for 100 foot auxiliary schooner. Gielow & Orr, 52 Broadway, New York City.

FOR SALE—No. 3396—Attractive keel sloop, 76′ x 15′ 4″ x 9′ 4″. Built by Herreshoff. Flush deck and cockpit. Sails new 1916. Two double staterooms and bathroom. Gielow & Orr, 52 Broadway, New York City.

NO. 2547—FOR SALE—Desirable 40 foot auxiliary knockabout. Draught 5 feet. Good sea boat. Sleeping accommodations 6 persons. Now in commission. Gielow & Orr, 52 Broadway, New York City.



NO. 4606—FOR SALE—64′ sea going cruiser. One double, one single stateroom. Heavy construction. Completely equipped, including launch tender. Gielow & Orr, 52 Broadway, N. Y. City.

NO. 2970—FOR SALE—Lawley built auxiliary yawl. 46′ x 10′ 6″ x 7′ 6″. Thoroughly overhauled, now in full commission. Sails new 1916. Inspectable near New York. Gielow & Orr, 52 Broadway, New York City.

NO. 1878—FOR SALE—Desirable 60 foot auxiliary keel schooner. Built on fisherman model. Partly in commission. Fully equipped. Exceptional bargain. Able sea boat. Gielow & Orr, 52 Broadway, New York City.

Of Interest to the Skipper

Passing of the Magnetic Compass

THE days of the magnetic compass, the sailor's needle, is passing. On warships and the great liners it is being replaced by the gyroscopic compass, which operates on the principle that the axle of a rapidly rotating disc tends to align itself with the axle of the earth. This axle is now the "needle." The shaft of every flywheel, dynamo and motor is striving in vain against its bearings to turn to the geographic north. The direct action of the earth which causes this is feeble. So in the gyroscopic compass this is reinforced by electric power to act instantly at any turn of the ship, and thus keep an axle of the disc always pointing north.

In 1851 the French physician, M. Foucault, while demonstrating the rotation of the earth detected the effect of the earth's action on the gyroscope that he was using. His discovery was the basic principle of the gyroscope compass, which now, sixty years later, has been perfected by an American engineer, Elmer A. Sperry. Thirty-five of our battleships and twenty of our submarines are equipped with it. Many foreign navies also use it.

In battleships a magnetic compass must be placed in a cage mast to reduce the effect of the mass of steel which the hull presents. But the gyroscopic compass, which is non-magnetic, is placed in a protected position below the water line.

Partnership Announcement

Mr. Daniel H. Cox, a member of the firm of Cox & Stevens from its formation, who resigned upon the outbreak of the war and became manager of the Ship Construction Division of the Emergency Fleet Corporation, has resumed his position as partner in the firm.

The admission as partners, of Mr. Bruno Tornroth, and Mr. Thomas C. Landi, who for many years have been associated with the firm, the former as head of its designing department, and the latter as manager of the brokerage department, is announced.

The wide experience gained by The Cox & Stevens organization during the war should prove of material advantage to our present and future clients.

* * *

THE Annual Meeting of the Royal Queensland Yacht Club, Brisbane, Australia, was held in the club-rooms on Monday, June 23rd, and the following officers were elected for the season 1919–20:

Commodore, W. A. Douglas; Vice-Commodore, E. H. Elliott; Rear-Commodore, Capt. O. Svensen; Hon. Treasurer, F. E. Wood; Hon. Auditor, B. F. Canniffe; Hon. Measurer, H. F. Brier; Hon. Secretary, A. C. Wishart; General Committee: F. M. Hart, E. S. Hobson, C. B. Fox, A. F. Reid, H. B. Munro, C. H. Whitehouse, A. G. Littleboy, C. G. Frew, R. J. Dix, R. Gailey, Jr., H. H. Hudson. Sailing Committee: T. Goodall, H. F. Brier, A. G. Littleboy. Admissions Committee: R. Gailey, Jr., W. A. Douglas, F. M. Hart, C. B. Fox, R. J. Dix.

Always Something New at Durkee's

IN line with their policy to be "right in the game" with the requirement for a Line Throwing Gun, by Certain Classes of Vessels, The Chas. D. Durkee Company have just put on the market one they manufacture at their Grasmere Factory, which has been approved by the U. S. Government and which is constructed to give satisfaction under the most trying conditions. Tests were made that may never occur in actual use, but the users of the "Durkee Line Throwing Gun" will be none the less benefited by the efforts of the Durkee Company to have their Gun A-1, before they began its manufacture. Orders are being filled without any delay and circulars describing same will be sent by Durkee & Co., New York City to any one applying for same.

Our Weights and Measures Forced Onto Us by Germans

STRANGE as it may seem, the present coinage of the British Isles as well as the weights and measures of both the British Isles and of America are German.

(*Continued on page 116*)

ALUDERS designed motor yacht, which is a type well fitted to serve both as a ferry boat and as a vessel for extended cruising.

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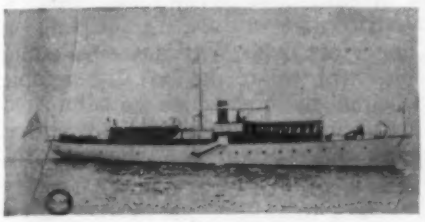
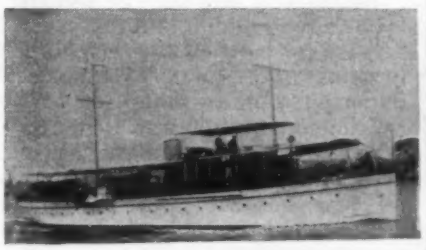
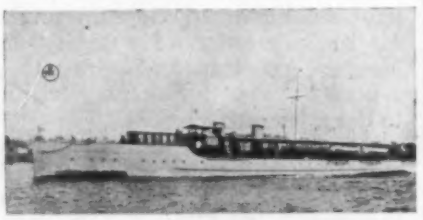
NO. 636—FOR SALE OR CHARTER—Modern 150 ft. steel steam yacht; most desirable of type and size available. Excellent accommodation; good speed. First class condition. Cox & Stevens, 15 William Street, New York.



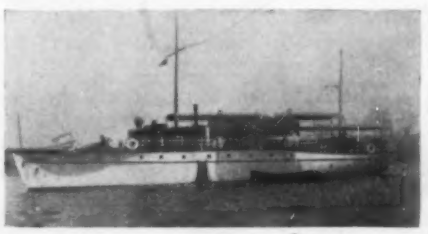
NO. 2026—FOR SALE OR CHARTER—Twin-screw cruising power yacht; 107 x 18 x 5.3 ft. Speed 11–12 knots; 75–90 H. P. Standard motors. Four staterooms, deck dining saloon, bath and two toilets, etc. Recently completely overhauled at large expense. Cox & Stevens, 15 William Street, New York.



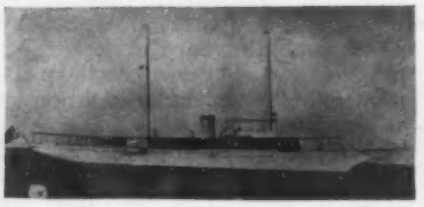
NO. 1796—FOR SALE OR CHARTER—Very roomy, light draft, twin screw cruising power yacht, 99 x 17 x 4 ft., adapted for Florida service. Speed 12–14 miles; Standard motors. Large dining saloon, six staterooms, three bathrooms; all conveniences. Cox & Stevens, 15 William Street, New York.



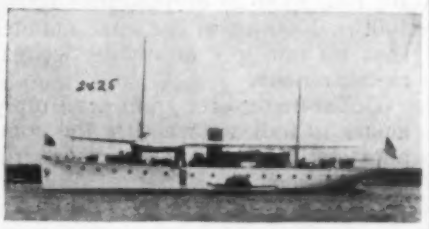
NO. 978—FOR SALE—High speed, triple screw, oil burning steam yacht; 165c 16 x 6 ft. Speed up to 30 miles. Deck dining saloon, four staterooms, etc. Low figure accepted for immediate sale. Cox & Stevens, 15 William Street, New York.



NO. 1526—FOR SALE—Twin screw cruising power yacht; 75 x 14 x 6 ft. Speed 12 miles; two 60 H. P. motors. Two staterooms, saloon, bath and toilet room, galley, etc. Price attractive. Cox & Stevens, 15 William Street, New York.

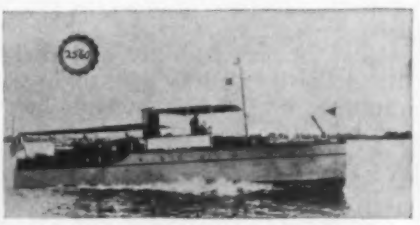


NO. 1225—FOR SALE—Twin screw cruising power yacht; 137 x 15.9 x 7.8 ft. Speed up to 18 miles; two 6 cyl. 300 H. P. Speedway motors. Excellent accommodations. Cox & Stevens, 15 William Street, New York.

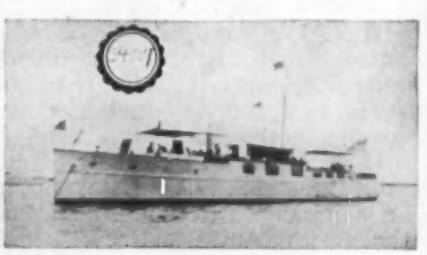


NO. 2425—FOR SALE OR CHARTER—Twin screw cruising power yacht; 90 x 16.6 ft. Speed up to 12½ miles; two 6 cyl. 60–90 H. P. motors. Excellent accommodation. Now in commission. Cox & Stevens, 15 William Street, New York.

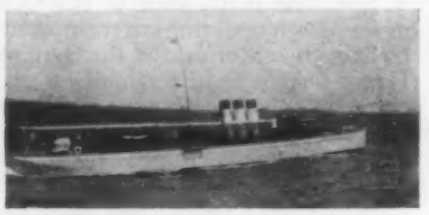
NO. 3324—FOR SALE—Fast bridge deck cruiser; 55 x 8.9 x 3 ft. Speed up to 23 miles; 8 cyl. 200 H. P. Speedway motor. Two berths in cabin, toilet room, large cockpit, etc. Price attractive. Cox & Stevens, 15 William Street, New York.



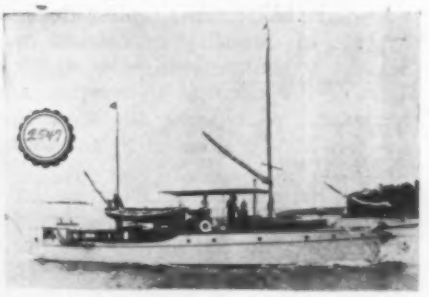
NO. 2500—FOR SALE—Fast, V-bottom, twin screw power cruiser; 60 x 13 x 3 ft. Built 1917. Speed up to 18 miles; two 6 cyl. Sterling motors. Double stateroom forward; roomy saloon aft with separate galley; two toilet rooms (one with Sitz bath). Low price for quick sale. Cox & Stevens, 15 William Street, New York.



NO. 3427—FOR SALE AT LOW FIGURE—Fast, roomy, twin screw cruising power yacht; 74 x 14 x 3.9 ft. New 1916; Lawley built. Speed up to 16 miles; two 6 cyl. "Speedway" motors 110–120 H. P. each. Large saloon, three staterooms, shower bath, etc. Cox & Stevens, 15 William Street, New York.



NO. 1215—FOR SALE OR CHARTER—In commission. Very attractive, high speed twin-screw steam yacht 140 ft. overall. Speed up to 27 miles. Construction, equipment, etc., highest grade. Deck dining saloon, two staterooms, bathroom, two toilets, etc. Low figure will be accepted for prompt disposal. Cox & Stevens, 15 William Street, New York.



NO. 2547—FOR SALE—Handsome, modern, exceptionally able gasoline cruiser; 64 x 12.6 x 4 ft. Speed 11½ miles; 60 H. P. 6 cylinder heavy duty motor controlled from bridge. Main saloon, toilet and separate galley forward; engine room amidships; double and single stateroom and bathroom aft. Cox & Stevens, 15 William Street, New York.

NO. 148—FOR SALE—Steel, flush deck, steam auxiliary schooner yacht; 130 ft. overall, 110 ft. waterline, 26 ft. beam, 15.6 ft. draft. Speed under power 9 knots; compound engine; electric lights; all conveniences. Extremely able craft; heavily constructed. Cox & Stevens, 15 William Street, New York.

NO. 3336—FOR SALE—Flush deck auxiliary schooner, 83.6 x 63.6 x 18.5 x 7.6 ft. Built 1915. 50–60 H. P. motor. Two staterooms, saloon, bath, two toilets, etc. Price and further particulars from Cox & Stevens, 15 William Street, New York.

(Continued from page 114)

The British pounds, both sterling and avoirdupois, originated with the old German Osterling Hanseatic League, which for hundreds of years controlled the trade of England. Indeed, the dominance of the Germans continued until a competent business manager ousted the German Hanse League from England—a patriotic work—and it was a woman who did it: Elizabeth.

The Germans forced these old standards on the British who in their turn landed them on America, America and Britannia were one until 1776.

What is still more remarkable is that America and Britannia continue to use these old German tools after Germany herself has scrapt them, and adopted (1871) the simplest decimal system of quantity expression ever known to humankind—the application of the decimal to weights and measures, which was the invention of that truly great Briton, James Watt, 1783.

Yet Britannia and America have lagged behind the rest of the civilized world by neglecting to adopt a system of quantity expression which is so simple that the average child of 10 can learn its essential features in 10 minutes.

Is it not time that we, as well as the Germans, should scrap the obsolete standards of war and trade, so complicated, difficult to learn and use?

Yes, the time has come when both of these nations must align themselves with the rest of the civilized world. They are too progressive, too patriotic, too democratic, too scientific, too forward-looking to hold aloof from civilization and to perpetuate methods so wasteful, and so inadequate, so hazardous to the life of the nation alike in war and peace.

It would be comical if its issues were not so tragic that Britannia and America use the old, scrapt German jumble, while Germany uses ours—the efficient decimal scientific, automatic system 1,000 times more effective than that the Germans scrapt.

We, too, must adopt meter-liter-gram that have come into well nigh world-wide use, and are so badly needed by Britannia-America.

For the world to adopt anything for world-wide, everybody's everyday use requires that it be simple—extremely simple.

All the world has adopted the alphabet of letters for written expression, each people in its own language.

All the world has adopted the Arabic numerals, 1234567890, for its mathematical computation.

All the civilized world has adopted the metric units to express its weights and measures, meter-liter-gram, with the single exception of U. S. America and Britannia.

The metric system—the Watt scientific measuring system—is the most simple and the most practical, an immeasurable advance on the weights and measures that now handicap the business relations and education of Britannia and America.

It is a system of weights and measures based on decimal computation, just as is the American decimal metric dollar.

The metric system has only 4 principal units—dollar-meter-liter-gram—and they can be multiplied by 10, 100, 1000, or divided into 10ths, 100ths, 1000ths, in the same manner that we multiply or divide decimal metric money.

Dollar-meter-liter-gram are simply *names* to indicate whether the computation refers to money, length, mass or weight.

Use and expression. We may use the same terms to express meters, liters and grams as we do to express dollars.

1.111 is exprest as one dollar, one 10 cent, one cent, one mill.

1.111 is exprest as one meter, one DECI-meter, one CENT-imeter, one MILL-imeter.

1.111 is exprest as one liter, one DECI-liter, one CENT-iliter, one MILL-iliter.

1.111 is exprest as one gram, one DECI-gram, one CENT-igram, one MILL-igram.

The average child of 10, who knows the metric decimal dollar and its decimal sub-divisions, can learn in 10 minutes as much of the metric system as 90 percent of all the people ever have occasion to use.

Just as you multiply and divide the dollar by 10-100-1000, so do you multiply and divide meters, liters, grams.

And as to definitions:—KILO is Greek for 1000, HECTO is Greek for 100, DEKA is Greek for 10. That is all.

These terms are used by others—we need not use them. In practical work, we may speak of 10,000 meters or 10,000,000 liters in the same way that we speak of 10,000 or 10,000,000 dollars.

It is all very simple. The question arises: How has such a unified system originated? How has the world so skilfully worked from the complex to the simple?

U. S. American Bureau of Standards, Director S. W. Stratton, tells, in an admirable article in Americana, the Scientific American Encyclopedia, in sense 1%—read the other 99% in Americana — metric system — the world's *one* system.

The metric system of weights and measures was the result of scores of years of research, anxious agitation and indefatigable labor.

Each locality and industry had its own weights and measures which crudely served local needs and primitive conditions. With increasing intercourse, this diversity of units and standards proved confusing and intolerable and demands for *one* simple system for world-wide use grew steadily to a climax about 1782.

James Watt suggested it. The great British inventor was greatly handicapped by the lack of the use by others of world-wide terms for the expression of quantities.

At that time every nation had its own local measures, all differing—a non-Watt hell. Watt's scientific and practical mind devised one simple decimal method which he submitted to various countries in 1783, and it was this system that became the metric system.

Talleyrand, the great French statesman, saw at once its immense practical value, simplicity, uniformity—world oneness. He caused it to be adopted in France, and France was soon followed by 33 other nations.

In his first message to Congress, George Washington said:

"A *uniformity* of the weights and measures of the country is among the important objects submitted to you by the constitution and if it can be derived from a standard at once invariable and *universal*, it must be no less honorable to the public council than conducive to the public convenience."

British House of Commons voted to adopt the metric system exclusively, but the House of Lords rejected it. So in these 2 countries alone, the ancient, cumbersome, obsolete and discarded German jumble for the expression of quantity still hampers, handicaps and legicaps these 2 peoples, who think themselves up to date, forward looking.

As we have already noted, Germany has had everything metrically standardized since 1871, so that in the world war practically every German detail was instantly interchangeable, and they fitted and worked together. *Without this automatic unity and simplicity there could have been no such great efficiency in the productive and military co-ordination of Germany.*

The Allies, on the contrary, had no such interchangeable uniformity. The metric standards of France, Italy, Russia, Rumania, Greece, Belgium, Montenegro, Portugal, Serbia, and the rest—23 fighting allies and 7 who had broken off diplomatic rela-

(Continued on page 124)

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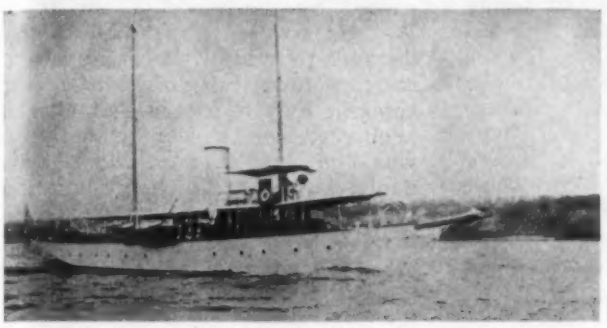

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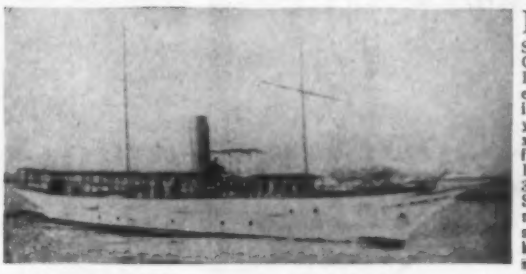

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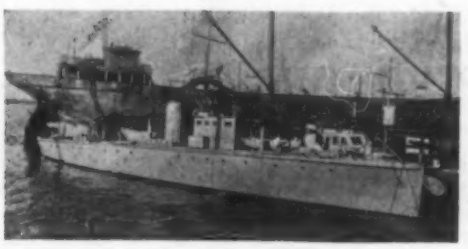

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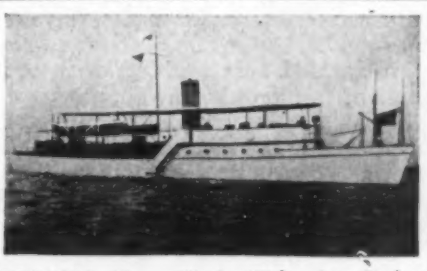

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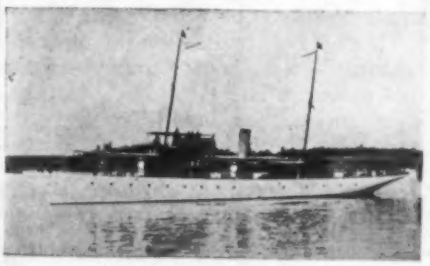

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Wartime Cruising

(Continued from page 102)

The crew added their bit to our stock of whale stories, and, for good measure, threw in a few about swordfish. One told about seeing a five-hundred pound fish drive his sword fourteen inches into a vessel's solid oak keel. Another said he had taken a fresh sword and pitched it five inches into pine wood. They all agreed that swordfish often wreck dories, and do it out of pure cussedness; but a whale, they averred, was as harmless as a rabbit if you kept away from his tail and did not provoke him.

Leaving the wharf, we skirted the shore and made our way between the clump of crazy fish-houses which face the harbor. Everywhere were lobster pots, gay-colored buoys, dories, and the other gear used by sea-toilers. A strong smell of drying fish filled the air, and swarms of flies were feeding on the garbage scattered about. Every now and then we ran into a group of great hulking fellows sitting in some doorway, whistling tunes, smoking pipes, whittling or mending lobster traps, as if life were something to be taken easily, and work only to be performed in a sitting posture. They are a great lot, these hardy sons of the sea, and if one is fortunate enough to get them to unlimber their close-reefed tongues, much may be learned which is not printed in books.

These men are commonly long and bony and awkwardly hung together, with flat, raw-boned faces, thickly tanned by wind and sun and spray, a bronze produced by countless battles with winter storms. But blow high or blow low, they fight their way through and bear their lot with the patient, uncomplaining fortitude of the seafarer, to whom the bitterest vicissitudes are merely in the day's work. There is no display of heroics; they simply take what comes to them and say nothing.

Scrambling over the slippery, weed-covered rocks, we reached a miniature beach of sand—closed in by rocks and summer houses—and climbed up to the rough unpaved street, which winds through the village and up to the hills. If we tripped on the uneven pathway we consoled ourselves that the streets, like the odd jutting houses on either side of them, were at least three hundred years old. It was all very peaceful, very simple and rustic, and if we had been of the fraternity of artists we should have asked no better fate than to come here with canvas and brushes, and immortalize the quiet beauty of the scene. For Monhegan is not as yet a typical summer resort; it is largely old Monhegan to-day, and it is to be hoped that such it will remain, one of nature's choice samples.

By five o'clock in the afternoon we were well on our way to Booth Bay, sailing over oily waters which were free from ripples excepting those caused by the wake of our boat. We had covered about half of the distance to White Islands, and were steering toward Ram Island light, thinking only of supper and a night anchorage, for the hope of seeing a whale had long since vanished. Suddenly, out from the forepeak came George's voice, hoarsely urgent:

"Port your helm, quick! There's a great big whopper of a whale dead ahead! If you don't move lively he'll be right under us. Holy scissors; what's the matter with you, Mundy, why don't you move?"

Very deliberately the chief navigator eased over the wheel until the shining black body of a sixty foot whale was disclosed, not more than five—hundred feet ahead, with white water cascading off his back. There was not much of him showing, only the hump and the outline of his body beneath the water; but still, it was quite thrilling to see one of the overgrown brutes at such close range. He swam on the surface a few minutes, while we circled around watching him, and then he dived. We had an argument as to the advisability of following in his wake, which we did for a short time, watching him come up and dive again, but George and Ned won out, and *Bonnie Jean* once more pointed her nose at Ram Island light.

We pulled into Booth Bay at half past six and dropped the hook near three or four patrol boats; then, obeying the orders of our autocratic cook, we set the table in the cockpit and toyed with a platter of broiled mackerel and fried potatoes.

The next day, after taking on fuel, ice, and provisions, we sailed across the beautiful Sheepscott River and followed the devious turnings of Back River to Bath. This short cut from Booth Bay to the Kennebec is the perfection of water travel, and it is a sail that no yachtsman who loves still water can afford to miss. If it were not for the seaweed deeply fringing the rocky shores at low tide, one might imagine himself sailing on some inland lake or river; but it is salt water and the tide rushes through some of the narrows at a great rate.

Just as we reached the queer old crook-backed bridge, which bars the way into the Kennebec, the starboard gear began to smoke once more. It

(Continued on page 120)

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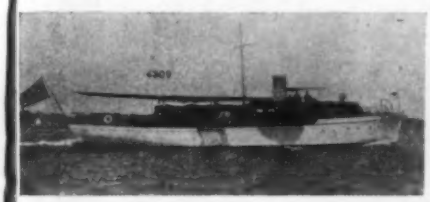

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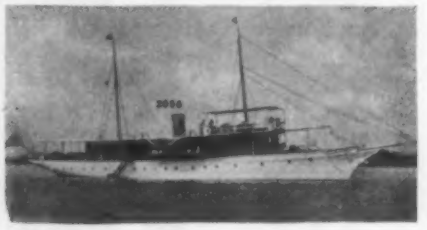

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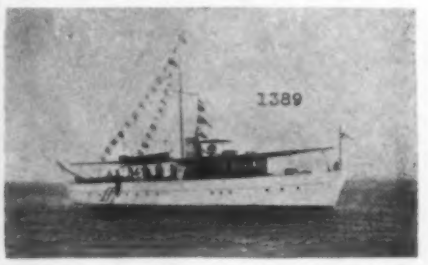

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(Continued from page 118)

chose an opportune time to do this, for the shores of Bath are lined with repair shops; and very shortly we were at one of them and had a man aboard. The trouble, he said, was too simple to talk about, and the remedy a matter of taking off a notched plate which held the reverse lever too far forward. This plate was one of Doc's pet inventions, but it was placed too far forward and caused a brass sleeve to bind on the shaft, which resulted in heat and smoke. The good-natured mechanician would accept no pay for his diagnosis, so we gave him a couple of cigars and sailed down the river, searching for a berry patch and a place to stop for the night.

At Winnegance Creek we found everything to satisfy our modest needs. The shallow stream led up to a dam and an old fashioned saw-mill, where there was just enough water for *Bonnie Jean* to swing without going ashore. It was a good berth, nevertheless, and the quantity of raspberries on shore was surprising. There were blue-berries also, and we gathered enough of both kinds to give old H. C. L. a severe jolt.

Tuesday morning, July 23rd, found us running from buoy to buoy down the Kennebec. On the way, Mundy amused himself by lining up the compass to determine the amount of deviation, which he said was a point and a half to the east when running south.

At the end of a three hour run we were around Cape Small and drawing near to West Point, where we planned on stopping for a short visit. Mr. and Mrs. Wheeler saw us coming and were standing on the rocks to meet us. As soon as we were within hailing distance "Van" waved his hand and shouted for us to come ashore—in a hurry.

And now began a repetition of the experience we had at this place two weeks before—another exhibition of genuine hospitality such as is seldom met with. After a visit and a cup of Mrs. "Van's" splendid coffee, we all rowed out to see the fishermen pull their nets and, incidentally, to get a nice fat fish for supper. We got the fish, and we also had the pleasure of seeing a practical demonstration of how salt air invigorates the human body. For George Pie, a man of seventy-nine years, was there, doing his share of the work with all the vim of a boy. To look at his sturdy frame one would never take him to be a day over fifty; and his mind was as active as his body. Swiftly, with the dexterity of long practice, the old man and his companions gathered up the net and bailed the leaping fish into the dories, casting away the whiting or other undesirables and

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(Continued from page 120)

keeping the mackerel, hake and cod.

That evening we dined on fried mackerel, garnished with a most delectable sauce, which was served in the Wheelers' sun-parlor. Just as the sun was passing out of sight, a little yellow bird settled on the topmost branch of a cedar tree in the yard and began his twilight song. He trilled a few notes and then perked his head prettily to one side as though waiting for an answer. Very soon he was rewarded by a warble from a tame canary in a cage across the cove, and after a tuneful prelude, they burst into a symphony of bird music which for sweetness and purity could never be rivalled by any hotel orchestra. Mr. Wheeler said the canary belonged to Joe Davidson, the noted sculptor, who was one of his neighbors, and that the birds sang to each other every night.

That night at Westport marked the end of our retirement in secluded coves and nearly the end of the good weather, for a sodden sea and sky was ours as we slowly poked along between the Casco Bay islands Wednesday morning; and on reaching Portland the stern reality of war was once more thrust upon us.

The harbor was filled with huge, gaunt-sided freighters, driven in by a U-boat scare, and the patrol boats darted in and out like gray ghosts. On shore we heard that a German submarine had sunk the Gloucester fishing schooner, *Robert and Richard*, only seventy-eight miles off shore, and that part of her crew landed at one of the docks just before we got in. There were twenty-two men in the crew and all of them reached shore after a long, hard pull. All of which was very exciting and caused us to wonder whether we would be allowed to leave port, even if we dared to do so. It looked just then as if we were in for a spell of bad weather, because the wind had hauled around to the northeast and the fog wrapped everything in its clammy folds. From a newly built ship near the float where we were tied came the unceasing thud of hammers, which mingled with discordant toots from the harbor tugs. The yacht club was as dead as a herring, the steward having gone to war the week before.

It was now merely a matter of marking time until the fog lifted, so we put on our shore clothes and made George, the treasurer, pay our way in theatres, restaurants and hotels until bedtime.

On Thursday we went to East Deering to see the launching of a big ship named the *Oksea*. She was the third Government vessel to be built at this yard of the standard Ferris type, which are wooden steamers as much alike as peas out of the same pod. She slid off the ways like a duck, going so fast that a small tug barely escaped being swamped, and finally crashed her stern into the side of another ship lying at a dock.

At 1.40 P. M. we left Portland to begin the long grind to York Harbor. The fog held, but it was not so thick but what we could see the shore-line. We were rather anxious, too, about keeping near that shore, because you never can tell what a German square-head is going to do next; and since hearing about their sinking the helpless Gloucester fisherman we thought that the nearer we kept to dry land the safer we would be. They might take a notion to shoot a hole in us just for fun; and while this brand of humor may be popular in Germany, it did not appeal to us at all.

The water was fairly rough and the east wind at our backs kicked up a following sea, but the sail helped to steady the boat, and we made fairly good progress. To be sure, the water did not look as friendly as a good cement sidewalk, as we climbed slowly up the back of one six-mile-an-hour wave only to swim on toward another bigger one, but there is a sort of exalted, upborn feeling in running before the wind in a boat not to be had in any other kind of sailing, which we found rather interesting after our days of inland yachting, and in spite of the hard steering we enjoyed every bit of it.

At 7.15 in the evening Mundy, who sat perched on the forward hatch in a halo of fog, located the first red spar leading into York Harbor and shouted the proper directions to George, who was at the wheel. Fifteen minutes later *Bonnie Jean* was safely anchored with smoke pouring out of the galley, where Ned was preparing vast quantities of first aid to the hungry. The amount of food consumed that night would never be tolerated in a well-regulated city boarding house—not for a minute! Still, ravenous appetites may be excused after a six-hour run over a choppy sea, so we plied knives and forks with a will.

There is not much to tell about being fog-bound near an aristocratic summer resort, particularly so when the harbor is barren of boats, unless one uses language unfit for publication; so let it suffice to say that we stayed in York until the weather changed.

On Saturday, July 27th, the wind shifted to the west and blew with vigor over a sea as blue as a girl's blue eyes. The sun shone down out of a perfectly clear sky as though it meant to make up for lost time. Altogether, it was a day that seemed

especially designed to give us a gratifying climax to our month of cruising, so we lost no time in getting under way.

We laid a course from the bell buoy off York to a certain red spar in Ipswich Bay—never mind *what* course the compass was off anyway—and plunged into it. The wind, blowing full in our faces, raised just enough sea to make it exciting. True, our speed sent showers of spray over us time and again, but because we were doing such good sailing no one minded the drenching and spirits were high. Morning-colored rainbows dripped from Bonnie Jean's sides as she rose again and again on the sunlit crests until she was washed as clean as a hound's tooth. It was glorious out there; and we will pleasantly remember that sail for many a day to come.

In due time we reached the quiet waters of the Annasquam River, where we stopped for dinner and to take account of stock. When we came to figure up, here is what we found: The cruise cost each of us $13.45 a week, which included all expense of running the boat as well as board, lodging and entertainment. In return for this modest sum we had had a month of the best sport on earth, covered about seven hundred miles, visited at least twenty-five different ports, and stored up enough energy to last another year. Our faces were tanned to a deep brown, our eyes bright, and our muscles full of snap. Considering everything, we felt sure that no other form of outing could have given us the same return for our money, or made possible such days and nights of utter freedom, health and manly enjoyment as our boat trip down the coast of Maine.

And so before starting for Swampscott, we resolved to cruise again next summer—down there where the mountains meet the sea and hundreds of coves wait to be explored. We never get enough of it; for the coast of Maine is one of infinite variation, and there is something about this island-dotted place that inevitably "gets" every one who comes in contact with it. It is a roomy coast and the possibilities for cruising can not be exhausted in a single lifetime.

THE END

The Stars as Aids to Navigation

(Continued from page 112)

A few interstellar distances, which the reader may calculate and verify, are as follows:

VEGA—ALTAIR		
Vega—Altair	34°	12′.0
Vega—α Cygni	23	51.2
Vega—Antares	71	41.7
Altair—Arcturus	81	13.9
Capella—Pollux	34	15.1
Capella—Aldebaran	30	41.7
Spica—Regulus	54	3.2
Betelgeux—Sirius	27	5.2
Bellatrix—Aldebaran	15	45.6
Rigel—Sirius	23	54.4

In bringing one star to another, the index is set at zero and the arc gradually swung open, keeping the reflected image in the field, until the second star is arrived at. It is quite possible to do this with the three diameter day telescope in place, but much easier if it is removed and the telescope ring used as a guide to look through until the stars are near each other. The chief advantage of a star telescope is that the horizon is more clearly defined. It has the same magnification as the three diameter day glass and covers a field of about five degree diameter as compared with three degrees for the day glass. This additional field is of course convenient but when interstellar distances are concerned, the day glass is otherwise just as useful. The sight tube can also be used if the horizon is sufficiently defined but it will be necessary that the peep hole be reamed out to at least 3/16 of an inch and even a little more. The 1/16 inch hole generally found with these tubes cuts off altogether too much light, beside being exceedingly inconvenient to look through, even for day work.

In using the tube it should be remembered that the limit of accuracy of observation due to the natural limitations of the human eye is one minute of arc. With the three diameter glass, whether day or night glass, the limit of accuracy is 20 seconds of arc. This happens to be also the limit of accuracy practicable in the construction of the sextant, due to the fact that the centre of the swinging arm, carrying the vernier, can never be set precisely in the center of the arc.

Both of the glasses above mentioned are made on the principle of the opera glass with concave eye pieces.

Part II of this subject will deal with certain improved methods involving a preliminary computation before the actual observation of the star, and also briefly with the causes for the difference between the mean and apparent positions of the stars, though these matters are not necessary for those navigators who are content to act upon the facts above given. As to the methods a knowledge of them is, however, convenient and very desirable.

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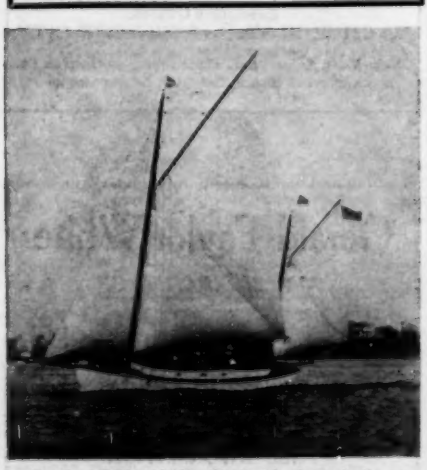

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The Round Pond

(Continued from page 94)

before closing, the despairing farewell to the beloved craft in the doldrums in the very middle of the pond. Tears were in the eyes and misery in the soul, till the good keeper promised rescue before the morrow.

So musing, a retired skipper closed his eyes. The cries of the children grew fainter and the pond grew larger. Over the face of a fairy lagoon came skimmering a white yacht, with grace in all her lines and joy in all her sails. Whither, O splendid ship, thy white sails crowding?

The yacht came nearer, and on her hull he read the name of a vessel that had long since sailed out of his life, *The White Swan*. At the helm was a boy in a white silk jerkin, the dress of Lohengrin. The skipper looked and saw the face of a boy whom only one silver-haired old lady would now remember. The yacht sailed swiftly on, till she contracted to the size of a toy. The helmsman disappeared, the lagoon contracted; and, to a warning voice of "Time to go home to lunch, Master Johnny," the little white hull was pulled ashore by two brown hands.

The old skipper blinked and walked home.

Our Weights and Measures

(Continued from page 116)

tions with Germany, including the nations of Central and South America that is to say some 30 of the allies—were *not* interchangeable with the British and American weights and measures. Even British and American measures were not interchangeable, with the result that great and grave difficulties, long costly delays, interfered with their *co-ordination and efficiency* promptly to aid their allies.

The French Minister of War, Millerand, said Kitchener's volunteers promptly arrived in France, splendid battalions, but *unarmed*. The German kaiser counted upon this confusion of standards for 2 years' delay—he thought he could crush France and gain world power before the allies, thus handicapped, were ready—indeed in ½ the time.

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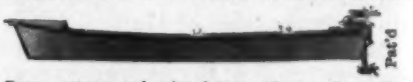

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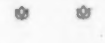

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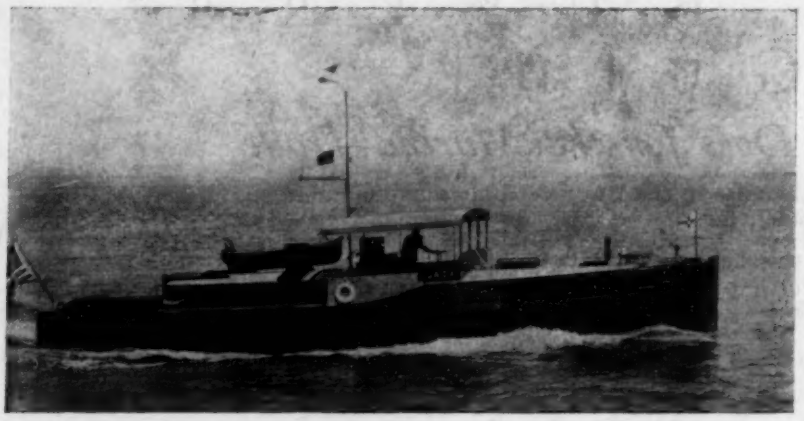

JA DA, owner Charles L. Harding of Boston, measures 56′ 3″ long, 11′ 3″ beam, 2′ 9″ draft. Twin six cylinder Sterlings; Bore 5½″, Stroke 6¾″, 145 H. P. each at 1400 R. P. M., drive her at over 24 miles an hour. JA DA was designed by Fred D. Lawley and built by George Lawley & Son Corporation, Neponset, Mass. In keeping with Lawley practice, this vessel is double planked, with canvas between the two layers of mahogany.

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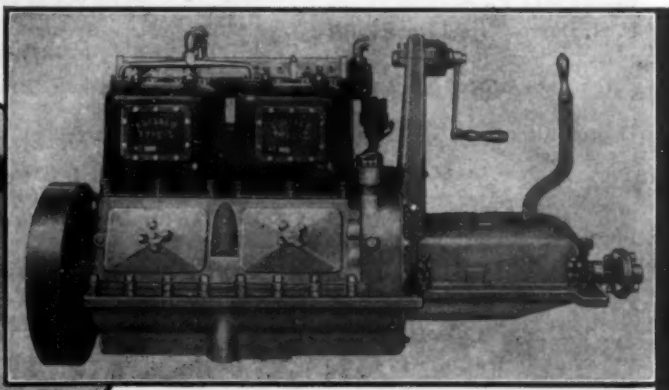

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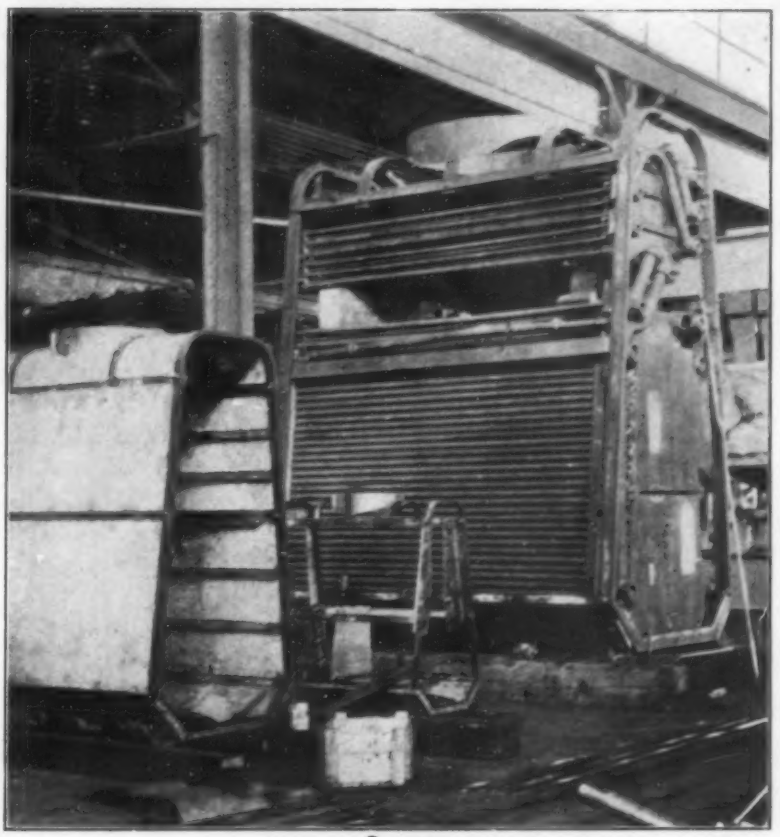

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